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MISCELLANEOUS PUBLICATION No. 269

WASHINGTON, D. C.

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A GRAPHIC SUMMARY OF FARM ANIMALS AND ANIMAL PRODUCTS

(Based largely on the Census of 1930 and 1935)

By

O. E. BAKER

Senior Agricultural Economist
Bureau of Agricultural Economics



This publication is one of a projected series of 10 publications as follows:

- A Graphic Summary of Physical Features and Land Utilization in the United States----- O. E. Baker
- A Graphic Summary of Farm Tenure----- H. A. Turner
- A Graphic Summary of Farm Taxation----- Donald Jackson
- A Graphic Summary of the Value of Farm Property.
B. R. Stauber and M. M. Regan
- A Graphic Summary of Farm Machinery, Facilities, Roads, and Expenditures----- O. E. Baker
- A Graphic Summary of Farm Labor and Population.
J. C. Folsom and O. E. Baker
- A Graphic Summary of the Number, Size, and Type of Farm, and Value of Products----- O. E. Baker
- A Graphic Summary of Farm Crops--- O. E. Baker and A. B. Genung
- A Graphic Summary of Farm Animals and Animal Products.
O. E. Baker
- A Graphic Summary of Agricultural Credit.
Norman J. Wall and E. J. Engquist, Jr.

This series, which has been prepared under the general direction of O. E. Baker, senior agricultural economist, will bring up to date the Graphic Summary of American Agriculture published in 1931 as Miscellaneous Publication 105.

The first Graphic Summary of American Agriculture appeared in the 1915 Yearbook of Agriculture (also issued as Yearbook Separate 681), and was largely based on the 1910 census. The second was contained in the 1921 Yearbook (also issued as Yearbook Separate 878), and was based largely on the 1920 census. The third was published as Miscellaneous Publication No. 105, in May 1931, and was based both on the 1925 Agricultural Census, and the annual estimates of the Bureau of Agricultural Economics. It was divided into 11 sections, but these sections were bound together and issued only as a single publication. It was more inclusive than previous issues, particularly of maps and graphs relating to the economic and social aspects of agriculture.

The publications in this series devote still more attention to economic and social conditions. They are based on both the 1930 and 1935 census reports, as well as the annual estimates of the Bureau of Agricultural Economics. They deal not only with changes between 1930 and 1935, but also with the changes during the decade of urban prosperity and agricultural depression that preceded the more general depression. Most of the distribution maps for crops and many of those for livestock present the 1929 census returns, because the drought of unprecedented severity and extent in 1934 would make such maps for 1934 misleading. Several increase and decrease maps, however, show the changes that occurred between 1929 and 1934, or 1930 and 1935.

The Graphic presentation was designed and drafted under the direction of R. G. Hainsworth, in charge of the Graphic Section of the Bureau of Agricultural Economics.

The clerical work was done in several divisions of the Bureau under the supervision of N. P. Bradshaw, who also prepared the indexes.

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By O. E. BAKER, *senior agricultural economist, Bureau of Agricultural Economics*

FARM ANIMALS

The advances in animal husbandry that were associated with the names of Bakewell, Bates, Collings Bros., and other beef-cattle breeders in England of years ago, and more recently with the Hood Farm, the Penshurst Farm, Field Bros., Gillette, and other breeders of dairy cattle in the United States, still continue. Notable improvements have been made likewise in sheep, swine, and poultry. Probably equally important have been the improvements in feeding, especially the use of minerals and the knowledge of vitamin values, to which several agricultural experiment stations have made important contributions.

The results of these improvements can be measured statistically. A century ago the quantity of milk produced per cow probably averaged around 2,000 pounds. Now the average production of all milk cows in the Nation is 4,200 to 4,600 pounds in most years, and above 6,000 pounds in some States. These more productive cows eat more, but the increase in value of milk produced has been greater than the increase in value of feed consumed. Moreover, dairy cattle, which produce much more food per unit of feed consumed than beef cattle, increased notably in number prior to the drought of 1934, whereas the number of beef cattle declined slightly.

There appears to have been a substantial increase in the quantity of pork produced per pound of grain consumed. Comparing crests with crests and troughs with troughs of the swine cycles since 1900, it appears that the increase in the number of swine on farms January 1 has been about 16 percent, while production of pork has increased about 40 percent. Progress in sanitation and in the control of disease, the feeding of minerals, the better balancing of rations, and the knowledge of vitamin values have decreased mortality and increased the rate of growth. There has also been an important diversion of slaughterhouse products from use in fertilizer to use as feed. Probably also a larger proportion of the pigs are raised on pasture.

The census and the estimates of the Bureau of Agricultural Economics afford evidence, likewise, of a marked increase in production of eggs per hen, although changes in the dates of census enumeration and the necessary dependence of the Bureau on sampling methods make an accurate measure of the change impossible. Judging from the census figures, adjusted for form of inquiry and date of enumeration,

production of eggs during the preceding year per chicken on farms at the beginning of the year of enumeration increased from about 39 eggs in 1879 to almost 60 in 1899, to 64 in 1919, and 68 in 1929.¹

The tendency to increasing production per hen appears to have continued since 1929. The monthly records of sample farm flocks collected by the Bureau since 1925 show an average during the years 1926-29 of 123 eggs per year, during 1930-33 of 125 eggs per year, and during 1934-37 of 126 eggs per year. During 1937, the average was 134 eggs per year, and this record has been more than maintained during the first half of 1938. As a large quantity of feed is required for maintenance, it is almost certain that a very material increase in the production of eggs per unit of feed consumed has occurred during the last half century.

In brief, improvements in breeding, improvements in feeding, the slaughter of cattle and swine at an earlier age, shifts from the less productive to the more productive kinds of animals per unit of feed consumed, notably from beef cattle to dairy cattle and hogs, and advances in sanitation and in the control of disease have induced an increased production of milk, meat, and eggs per unit of feed consumed.

These advances tend to make meat and dairy and poultry products more plentiful than they otherwise would be. They tend, therefore, to increase consumption of these products and to raise the standard of living of the people. Nearly all advances in agriculture, an industry characterized by free competition, tend in the long run to benefit the consumer more than the producer.

But production of meat has not kept pace with population growth, and as a result per capita consumption has decreased about 16 percent since the beginning of the century. Of milk and its products and of eggs consumption per capita apparently increased somewhat from 1910 at least until 1930. The per capita consumption of the cereals has declined, apparently, nearly one-fourth. With the decline in total consumption of food per capita, associated doubtless with the increasing proportion of the people engaged in sedentary occupations, the use of meat has declined much less than the use of the cereals, and the use of milk and eggs has tended to increase. These animal products are more expensive than the cereals, but are also more valuable from the standpoint of vitamins, proteins, and fats contained.

The increase of agricultural production during the last 20 years is attributable almost wholly to increase in the production of meat and milk and poultry products. The aggregate production of the crops (about 70 percent of which, measured by acreage, is used to feed livestock) was less during the last 10 years than in the 10 years preceding, and the total sustenance supplied by pasture apparently has declined 10 percent or more.² Nevertheless, the production of livestock and livestock products was apparently more than 10 percent greater in the later than the earlier decade. But much, perhaps most, of this increase is attributable to the substitution of gasoline for horse and mule feed and to the diversion of this feed to milk and meat animals.

¹ Estimated from census data by S. A. Jones, Bureau of Agricultural Economics.

² NATIONAL RESOURCES BOARD REPORT. December 1934. See p. 124. PIPER, C. V., and others. OUR FORAGE RESOURCES. U. S. Dept. Agr. Yearbook 1923: 311-414, illus. 1924. See p. 369.

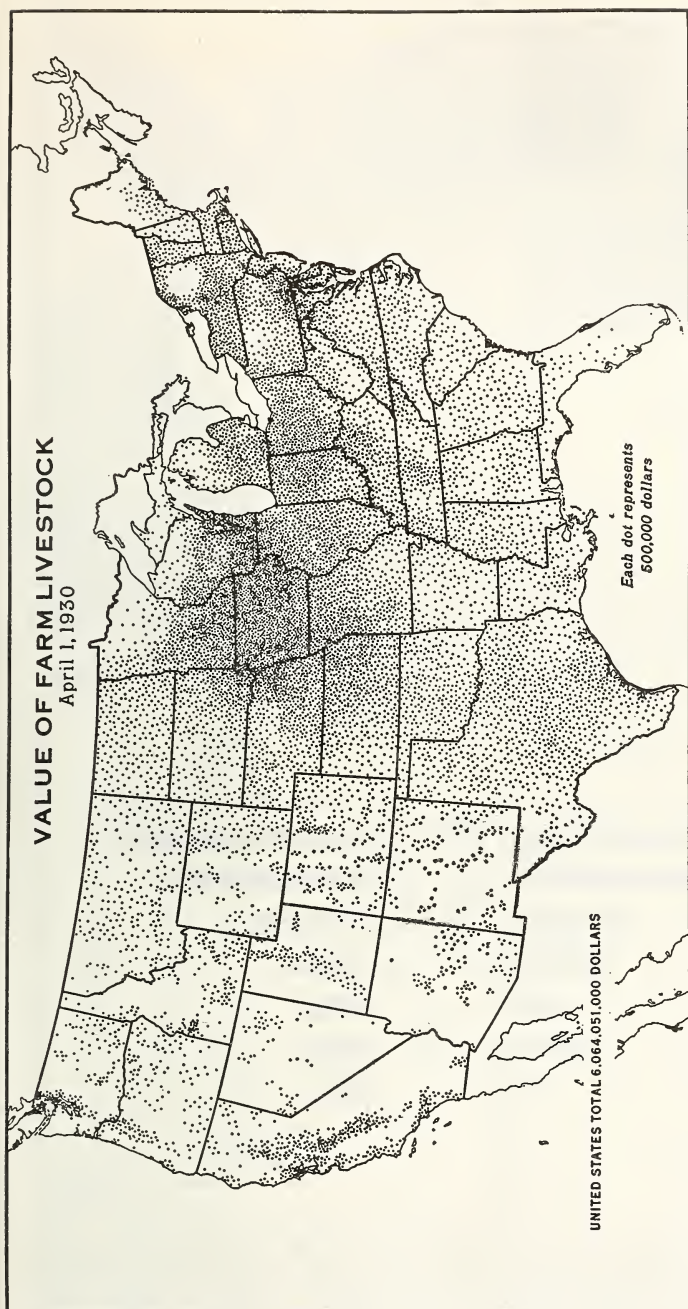
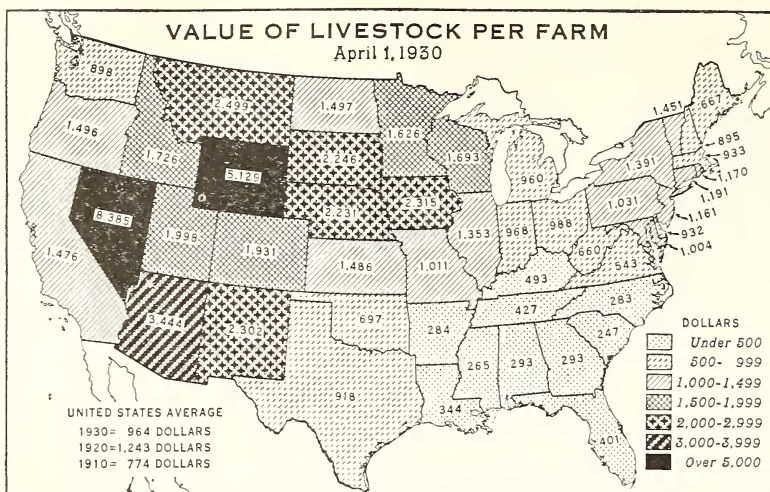
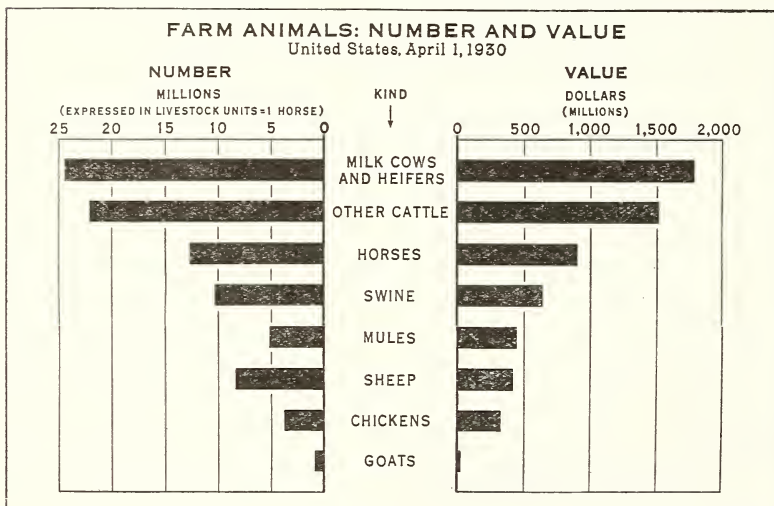


FIGURE 1.—The value of livestock in the Corn Belt is between one-fourth and one-third of the value of all livestock in the United States, or more than that in the entire western half (outside the Corn Belt). The value in Iowa is greater than in all the Cotton Belt, excluding Texas and Oklahoma. There is dense distribution in southeastern Minnesota and southern Wisconsin, in Michigan, New York, and southeastern Pennsylvania. In these districts dairying is very important. The value of the livestock constitutes about 10 percent of the total farm investment in the Corn Belt, about 11 percent in the Cotton Belt, 17 percent in the Grazing and Irrigated Crops Belt, and 10.6 for the country as a whole.



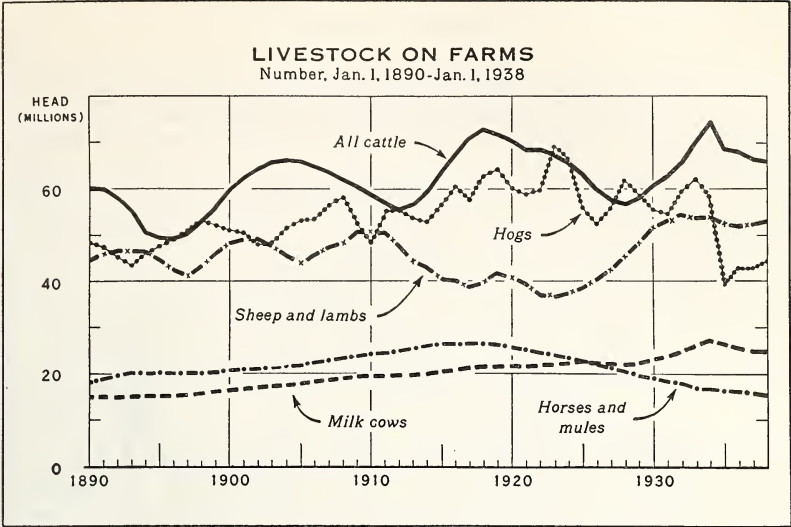
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FIGURE 2.—In the Grazing and Irrigated Crops Belt there are many large cattle ranches and sheep outfits. These large ranches help to make the average value of livestock per farm in several far Western States the highest in the country. Moreover, livestock constitutes a larger proportion of the value of farm property in this region than in any other major region. The western Corn Belt States come next in value of livestock per farm. The Cotton Belt has the least livestock per farm, many croppers' holdings (classified as farms by the census) having only a mule.



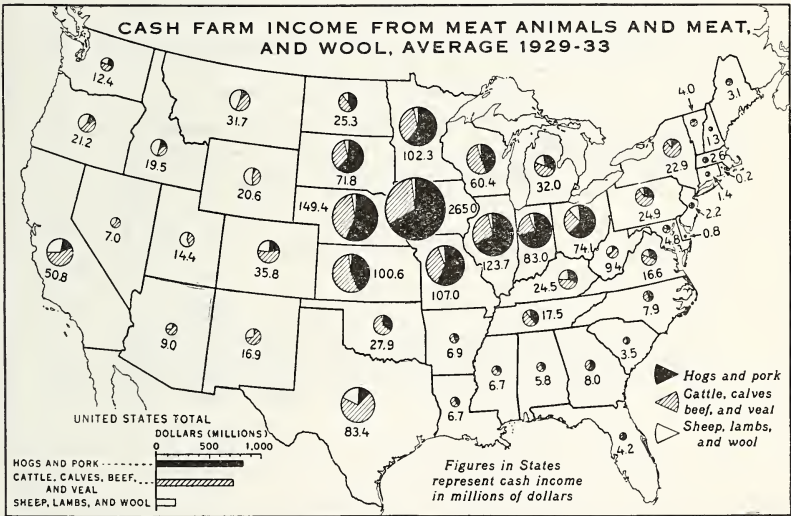
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FIGURE 3.—The bars on the left represent animal units, not absolute numbers, based on feed requirements. A horse or a mule is considered a unit, a dairy cow, 1.1 units, a steer, 0.52 unit, a hog, 0.23 unit, a sheep or goat, 0.17, a chicken, 0.01 unit; weights for young animals varied with age. Cattle constituted 54.5 percent of the value of all farm animals, April 1, 1930, horses and mules 22.2 percent, swine 10.6 percent, sheep and goats 7.1 percent, chickens 5.3 percent. But measured in value of products, excluding the value of power produced by horses and mules, cattle contributed about 53.0 percent.



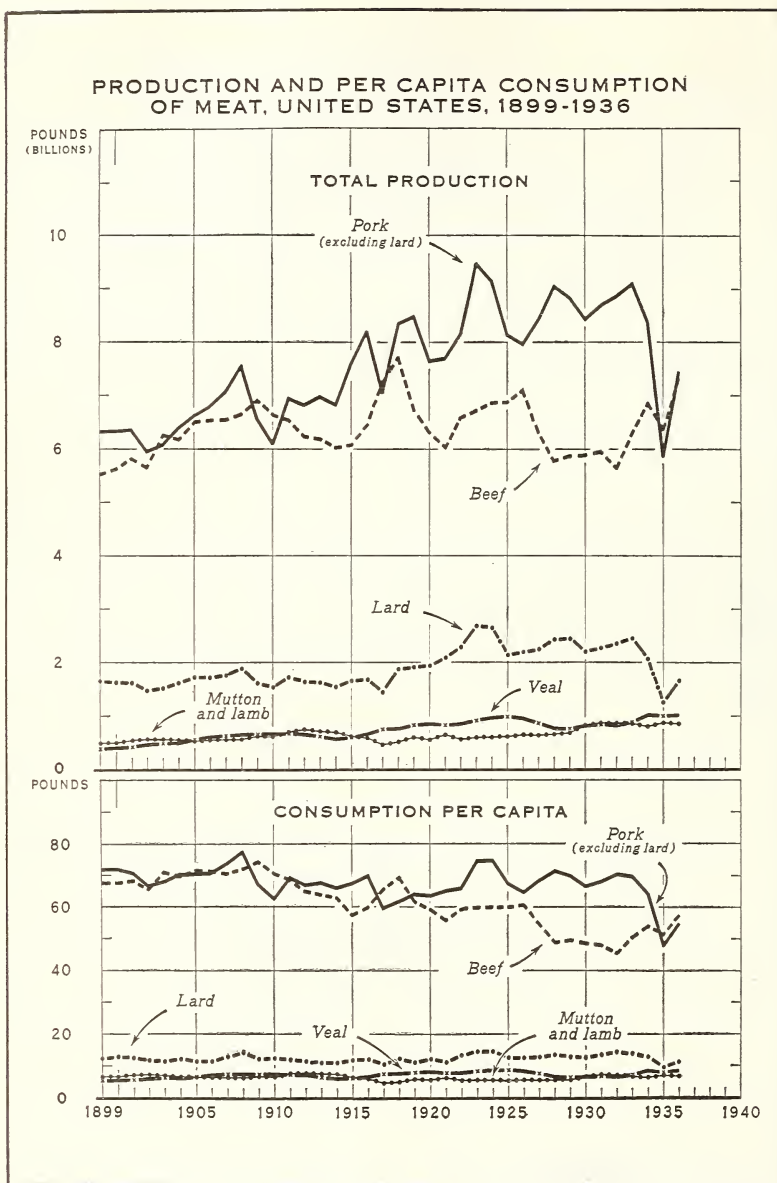
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FIGURE 4.—The graph shows the 16-year cycle in cattle numbers, with the normal 6-year rise and 10-year decline. This cycle is in beef cattle, as number of milk cows trended upward rather regularly until 1934. This upward trend in milk cows accounts for the upward trend in all cattle. Hog numbers have a shorter and less regular cycle. In sheep, there is a suggestion of a 7- to 10-year cycle before the rise from 1922 to 1932. The number of horses and mules (considered jointly) has been declining since 1920.



BAE 20038

FIGURE 5.—The national excess in farm sales of hogs and pork over cattle and calves, beef and veal, is due to the excess in the Corn Belt States, including Minnesota. In all other States, except Georgia and the Carolinas, the sales of hogs and pork were smaller. The Corn Belt provided about half the value of farm sales of meat animals and meat (excluding poultry) and wool during 1929-33. The sales of dairy products, not shown in the map above, almost equaled in value those of meat animals and meat, and poultry products sold were about half as large in value.



BAE 34122

FIGURE 6.—Before the corn-hog adjustment program and the drought in 1934, the trend in pork production had been upward for a third of a century. The rate of increase was about equal to that of population so consumption per capita was maintained. The long-time trend in production of beef was horizontal, causing a downward trend in per-capita consumption. Of veal, largely a byproduct of the dairy industry, per-capita consumption has gone slightly upward, as dairying expanded. Per-capita consumption of lamb and mutton has held near 6 pounds annually.

HORSES AND MULES

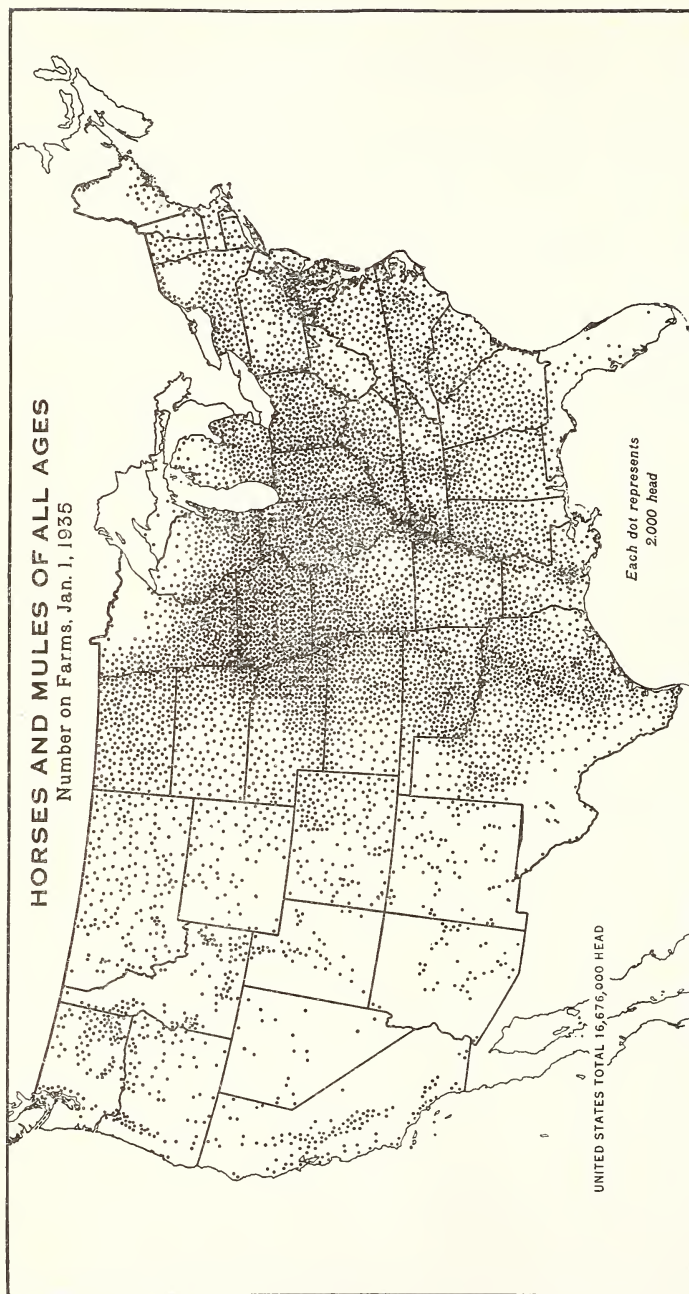
One of the greatest changes in American agriculture since the World War has been in the number of farm animals, particularly of horses and mules. Crop acreage, and probably the acreage of pasture, in the Nation as a whole remained practically stationary from 1918 until the drought years, which with the agricultural adjustment program induced a notable decrease, but are now back to the levels of 1929 and 1919. By contrast, the number of horses and mules, considered jointly, on farms and not on farms, has decreased about 45 percent since 1919, releasing 35,000,000 to 40,000,000 acres of harvested crops and as much more pasturage for other uses, principally for the production of meat and milk. The increase in the agricultural surplus that occurred after 1922 can be attributed in large measure to this release of land incident to the substitution of gasoline for horse feed.

These 35,000,000 to 40,000,000 acres of crops nearly equaled the increase of the crop acreage during the World War decade, 1909-19. At the same time, agricultural exports decreased rapidly, and the increase in the Nation's population was retarded by the decline in births and the restrictions on immigration. Prices of farm products were affected.

The share of the national income received by agriculture was also affected by the reversal in the current of exchange in payments for power. In previous years many farmers had sold horses and mules in the cities and feed for these work stock, whereas with the use of the automobile and tractor both the capital outlay and expenditure for fuel were paid to nonfarm people. The farmers became buyers of power equipment and gasoline to the extent of hundreds of millions of dollars a year—over a billion dollars in 1937. Whether this decrease in the farmers' income and increase in their outgo were counterbalanced by the sale of crops and livestock products from the 35,000,000 to 40,000,000 acres, and by the lesser costs for labor, cannot be accurately determined, but the fact remains that measured in terms of prices of things formerly bought, the purchasing power of the national net farm income is no greater now than a quarter century ago. And farms are more numerous.

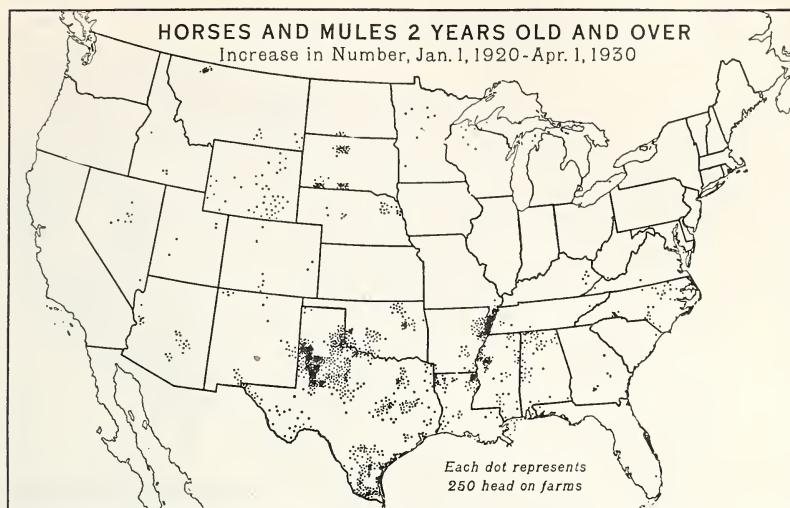
During the economic depression the decline in total number of horses and mules was retarded by an increase in colts raised. The average annual decrease in number of horses, including colts, was 700,000 a year between 1920 and 1925, about 580,000 a year between 1925 and 1930, about 376,000 a year between 1930 and 1935, and 233,000 a year since 1935. The figures for mules are 53,000 average annual increase from 1920 to 1925 (the peak year), then annual decreases in the succeeding periods of 107,000, 112,000, and 115,000. The sales of tractors increased as the depression receded. How long the decline in number of horses and mules will continue, with resulting reduction in area of land needed by work stock, is uncertain; but it is certain the decline must continue for several years, for not enough colts are being raised to replace the horses and mules that die.

The following maps show not only the geographical distribution of horses and mules, but also the regional changes in number from 1920 to 1930 and from 1930 to 1935. These shifts in the past deserve consideration in forecasting the future. Other maps show the areas of purchases and sales of work stock and of "horseless" farms.



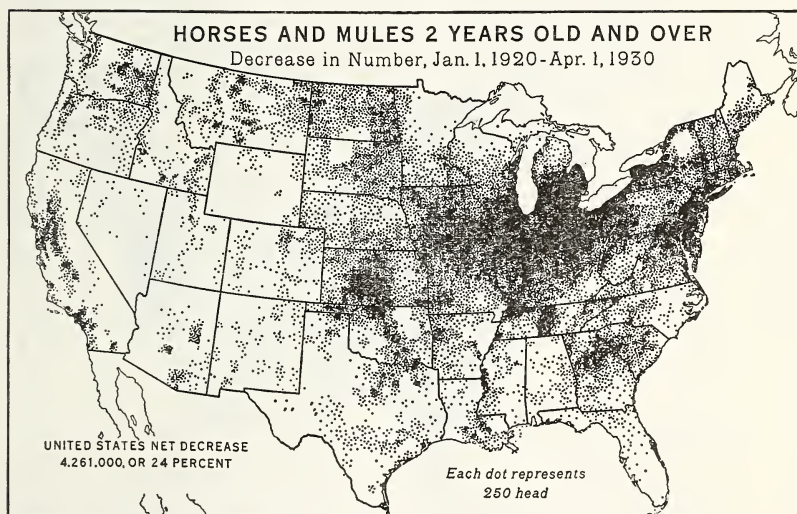
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FIGURE 7.—Nearly one-fourth of the horses and mules in the United States are in the Corn Belt, and three-fourths are in the humid eastern half of the country. Fewer numbers are found in the Cotton Belt and in sections of the Corn and Winter Wheat Belt chiefly because of the smaller acreage in crops. The area of crops per mature horse and mule in the Cotton Belt (18 acres in 1934) was almost as large as in the Corn Belt (21 acres) and approached that in the Dairy Belt (22 acres). There were fewer tractors in the Cotton Belt, and a larger proportion of the crops are intertilled.



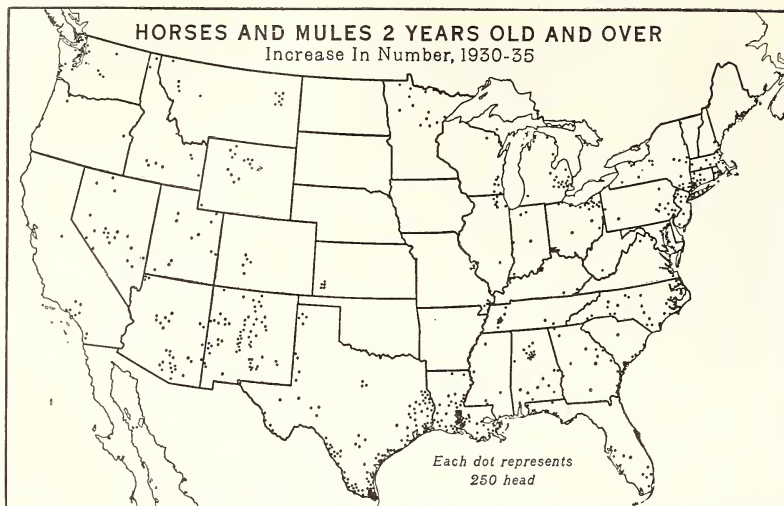
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FIGURE 8.—The increase in number of horses and mules during the decade preceding the depression was confined almost entirely to the Mississippi River bottom lands where drainage was in progress, and to areas of expanding crop acreage in southern and western Texas and northward in the Great Plains region. Outside the Cotton Belt most of the indicated increases are local (fig. 9).



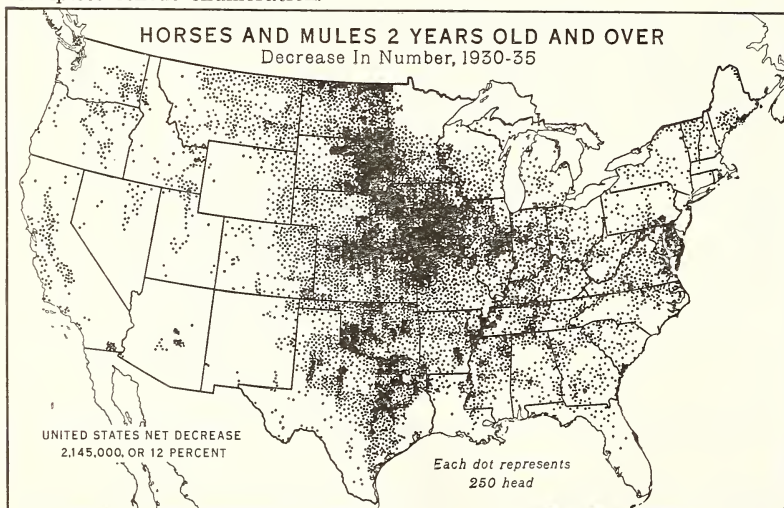
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FIGURE 9.—The greatest decreases in work horses and mules between 1920 and 1930 took place in the eastern and central Corn Belt, in the Dairy Belt, in the Wheat Belt, and in California—in brief, where the increases in tractors were greatest. But notable decreases occurred also in Georgia and South Carolina and in parts of other Southern States. These were associated with decreases in total cropland harvested, attributable principally to soil erosion and the ravages of the boll weevil rather than to the use of the tractor and the automobile.



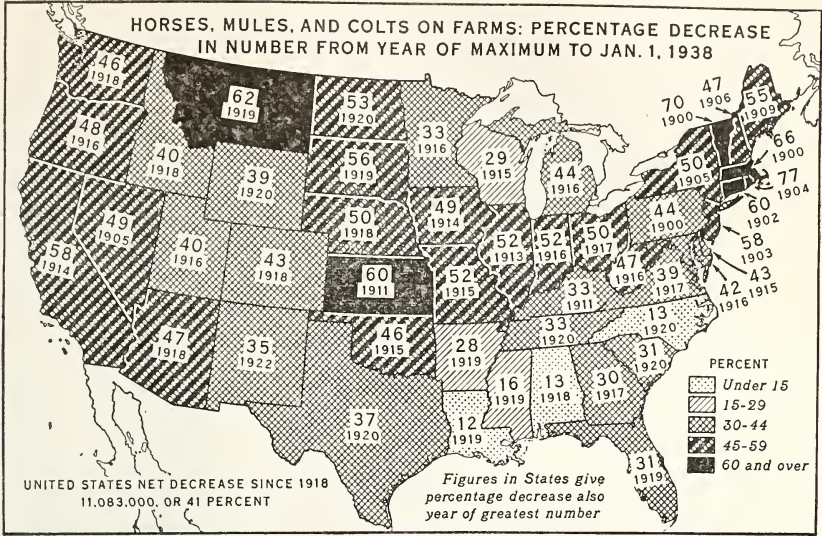
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FIGURE 10.—The increase in workstock during the recent depression period was small and scattered. Apparently, an increase in workstock was induced by the increase in number of farms, mostly self-sufficing or part-time farms, in the Boston-New-York-Philadelphia belt, and near Cincinnati, Cleveland, Detroit, Chicago, and Birmingham. The return of unemployed Mexicans to their home communities and Indians to their tribal lands in the Southwest had a similar effect. The increase in southern Louisiana, southeastern Texas, and the lower Rio Grande Valley may be due in part to a more complete census enumeration.



BAE 31518

FIGURE 11.—The decrease in work animals during the depression years was greatest in the regions of commercial crop production—the Wheat Belt, the Corn Belt, especially the western drier part, and the western Cotton Belt. Low prices for farm products, felt more keenly by commercial farmers than by those less commercial, partially explain this regional decrease. There was practically no increase in mechanization during these years, but the horses were growing older and some were dying—also some were sold. In the Dairy Belt the decrease was small and scattered, except along the margin of the Corn Belt.



BAE 31690

FIGURE 12.—The decrease in horses and mules between the year of greatest number (since 1900) and the year 1938 exceeds 50 percent in most of the Northeastern States, most of the Corn Belt, the Spring Wheat States, and California. It is only 10 to 30 percent in the Cotton Belt east of Texas and Oklahoma. Had the use of the automobile and tractor not intervened, there might have been several million more horses and mules on farms in the United States on January 1, 1938, instead of 10,102,000 less than on January 1, 1920.

HORSES AND MULES OVER AND UNDER 2 YEARS OLD
Number on Farms, Jan 1, 1900-1938

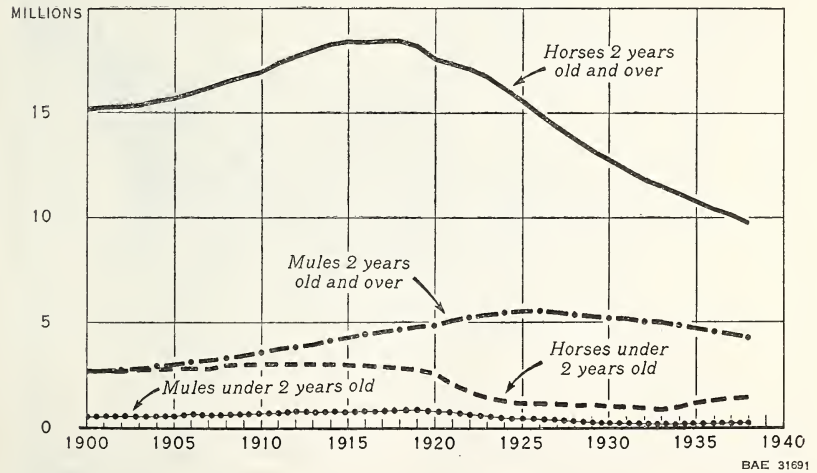
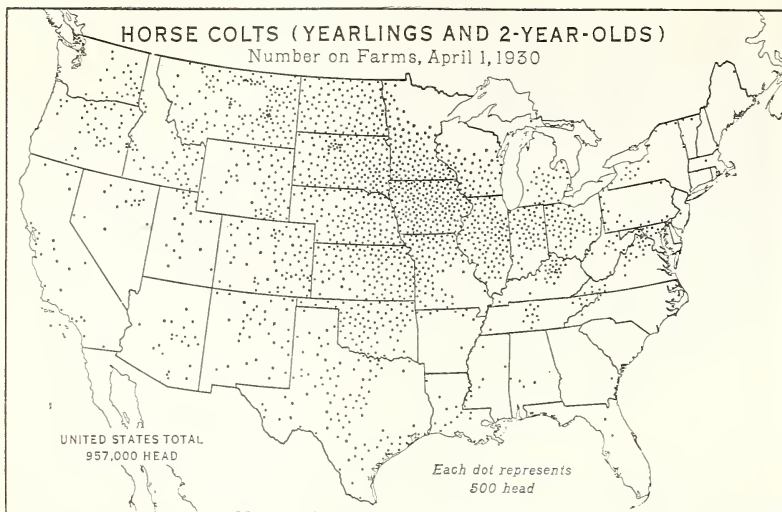
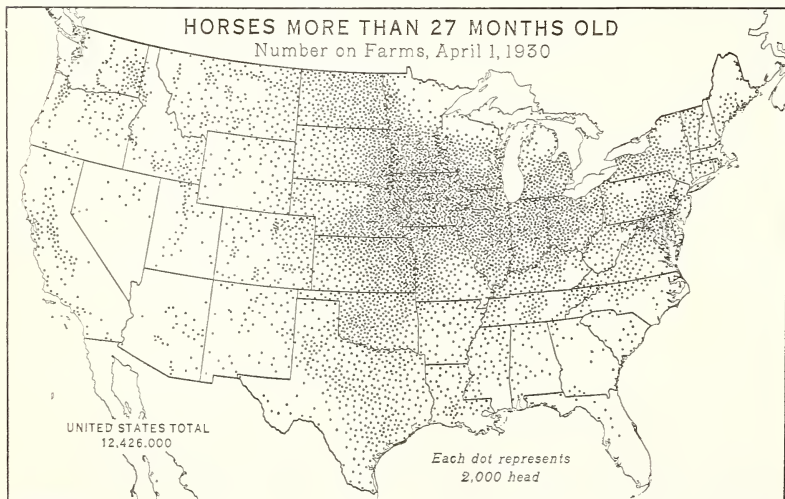


FIGURE 13.—The number of horse colts reached the maximum about 1910, and of mature horses about 1915. But mule colts continued to increase in number until 1920, and mature mules until 1926. Mules are used for power mostly in the South, and the small size of farm holdings associated with cotton production, the mountainous surface of the southern Appalachians, and practices in production of several of the crop specialties grown on the Coastal Plain, have retarded the use of tractors and automobiles in the South. Colts are now increasing in number.



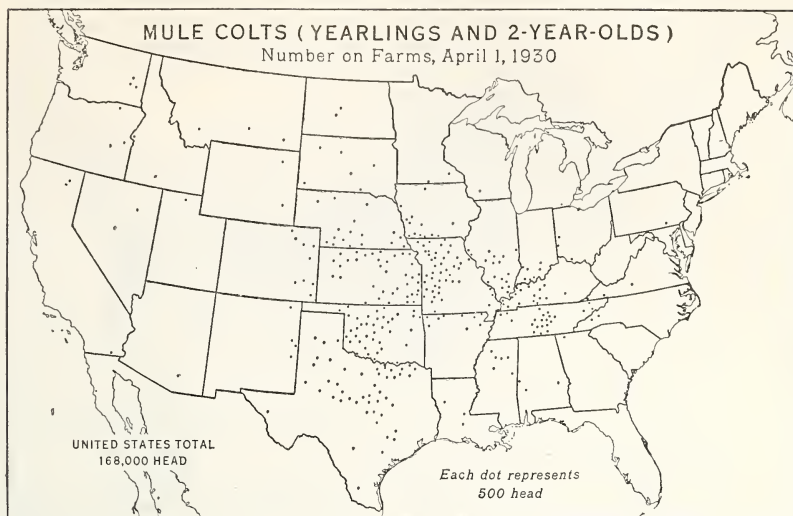
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FIGURE 14.—Over one-fourth of the horse colts in the United States in 1930 were in the Corn Belt, one-eighth in the Spring Wheat Belt, one-fifth in the Winter Wheat Belt and remainder of Texas and Oklahoma, and one-fifth in the Grazing and Irrigated Crops Belt. These are regions of surplus grain and cheap forage. Few horses are raised in the Cotton Belt or the Dairy Belt, because these are areas of deficient feed production. It is more economical to ship the mature horses or mules into these areas than to ship in the feed and grow them. In the Dairy Belt the use of hay and pasture for dairy cows may be more profitable than for colts.



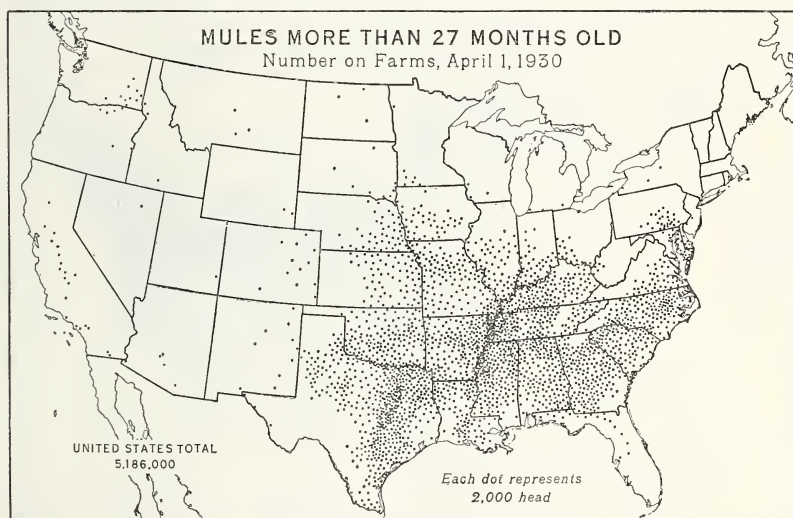
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FIGURE 15.—More than one-quarter of the mature horses in the United States in 1930 were in the Corn Belt, one-fifth in the Dairy Belt, and one-twelfth in the Spring Wheat Belt. About three-quarters are in the humid eastern half of the country. The small number of horses in the Cotton Belt and in parts of the Corn and Winter Wheat Belt is caused chiefly by the preference for mules as work animals in these areas and to a less dense crop acreage.



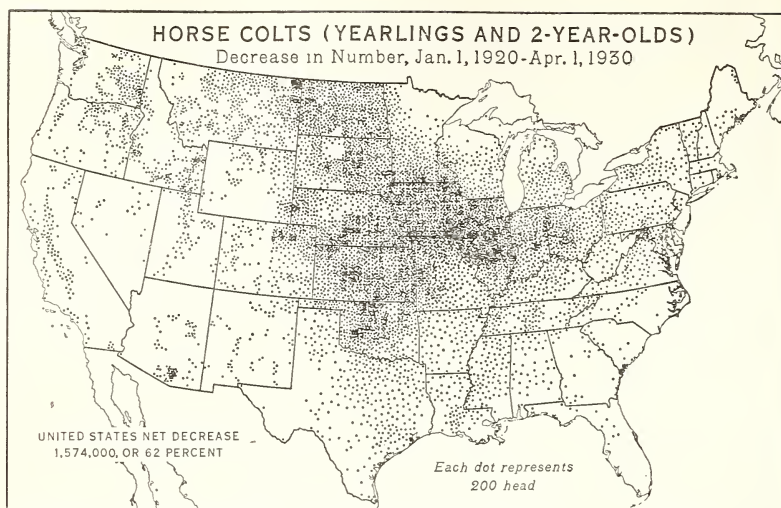
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FIGURE 16.—Most of the mules are raised in Texas, Oklahoma, Kansas, Missouri, southern Nebraska and southwestern Iowa, southern Illinois, Kentucky, and Tennessee. The centers of mule production are about 300 miles south of the centers of horse production. This may be due in part to the adaptation of the mule to warmer temperature than the horse, and in part to the shorter distance and smaller cost of transportation to the Cotton Belt, where most of the mules are sent. There were only about half as many mule colts in 1930 as in 1925.



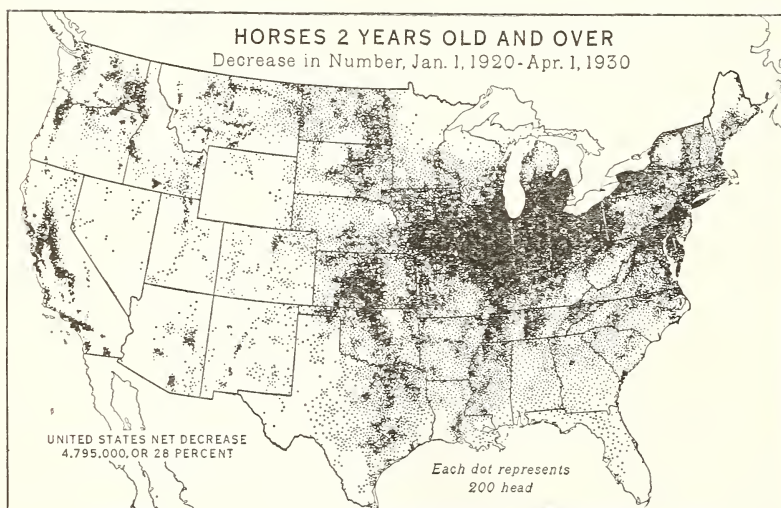
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FIGURE 17.—About three-fourths of the mature mules in the United States are in the Cotton Belt, and the Corn and Winter Wheat Belt. In the eastern Cotton Belt (east of Texas and Louisiana) where Negro farmers are most numerous, there are more than four times as many mature mules as horses. The number of mature horses on farms in the United States decreased 28 percent between 1920 and 1930, whereas, the number of mules increased 11 percent. But since 1926 the number of mules has been decreasing in most of the States.



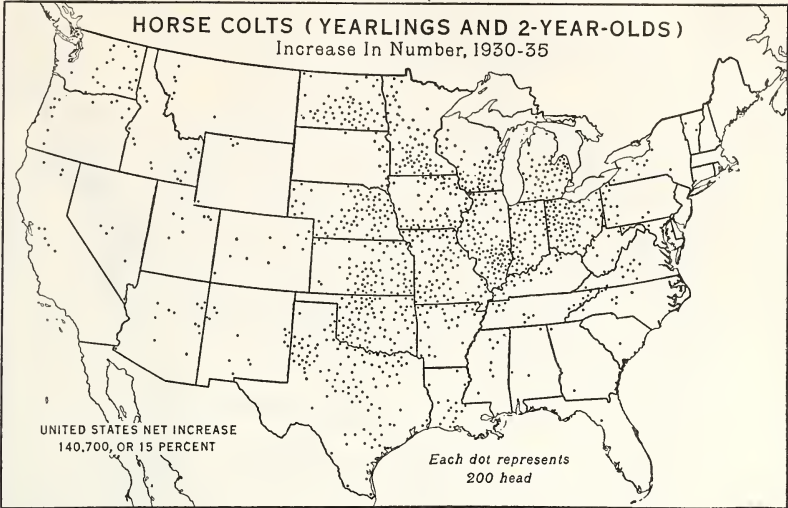
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FIGURE 18.—The decrease in horse colts between 1920 and 1930 was practically universal and was greatest in number where the greatest number of colts are raised—in the Corn Belt, the Wheat Belt, and the Great Plains. Nearly all of this decrease took place before 1925. The number of colts in the Nation started to increase in 1934. Between 1930 and 1935 there was a net increase of 15 percent (fig. 20). This increase may prove transitory, for tractors were being sold in 1937 and 1938 in as large number as before the depression.



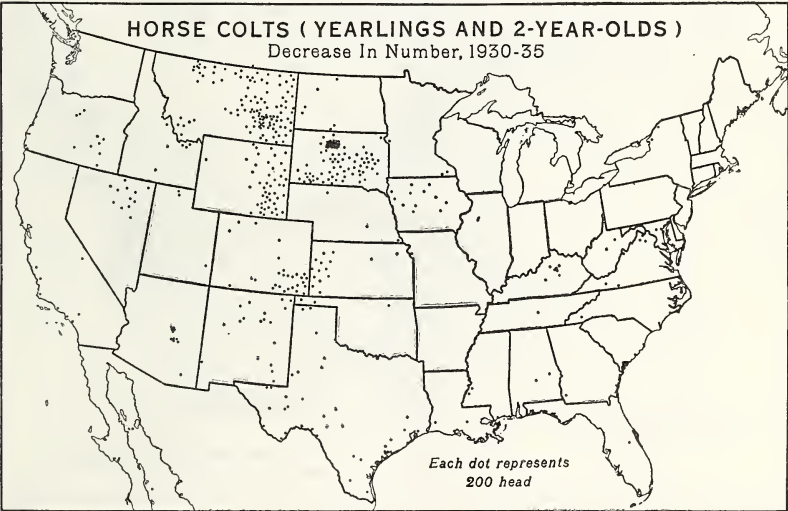
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FIGURE 19.—The decrease in work horses between 1920 and 1930 took place not only in the Corn Belt, the Dairy Belt, the Wheat Belts, and California, where tractors increased notably, but also in the South, where tractors are few. (See Miscellaneous Publication No. 264, relating to farm machinery, fig. 11.) In most Southern States an increase in mules took place, indicating a tendency to substitute mules for horses (fig. 26). The percentage decrease of horses was particularly heavy in Mississippi and eastern Texas.



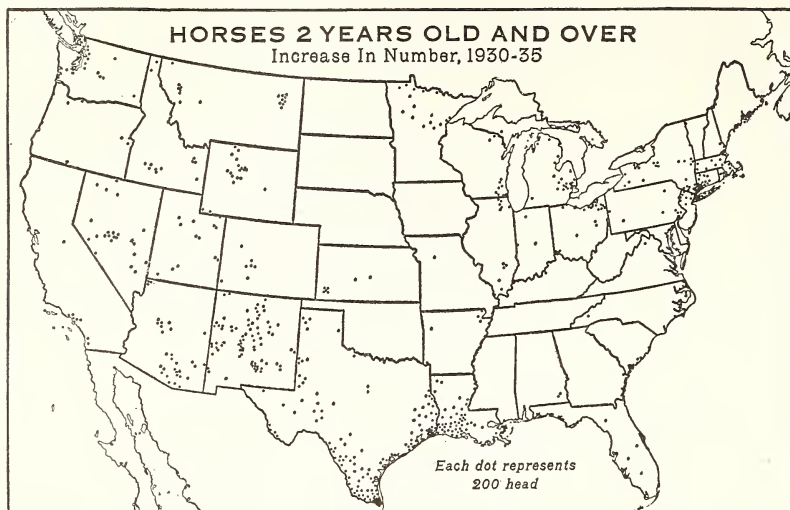
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FIGURE 20.—Between 1930 and 1935 the downward trend in the raising of horses was reversed, the increase in colts starting in 1934. The increase was greatest around the margin of the Corn Belt—from Ohio northwesterly to North Dakota and southwesterly across southern Illinois to Kansas, with an extension southward across much of Texas. There was a general and large percentage increase in the intermountain region of the West, notably in eastern Washington. Doubtless the economic depression and inability to buy tractors, with rapidly rising prices for horses and mules, were important factors accounting for the increase in colts.



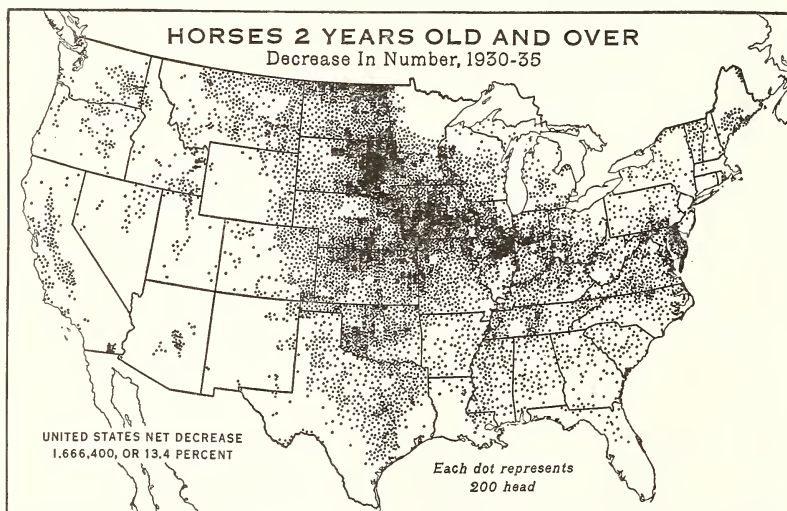
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FIGURE 21.—The decrease in horse colts between 1930 and 1935 was found chiefly in the drought areas of the West, notably South Dakota, eastern Wyoming and Montana, and the “dust bowl” of southeastern Colorado and adjacent Kansas, Oklahoma, New Mexico, and Texas. A decrease, probably of thoroughbred colts, occurred also in the bluegrass district of Kentucky, and in the fox-hunting counties of Fauquier, Rappahannock, and Loudoun in the Virginia Piedmont. In these districts the effect of the depression on colt production was the reverse of that in most farming areas.



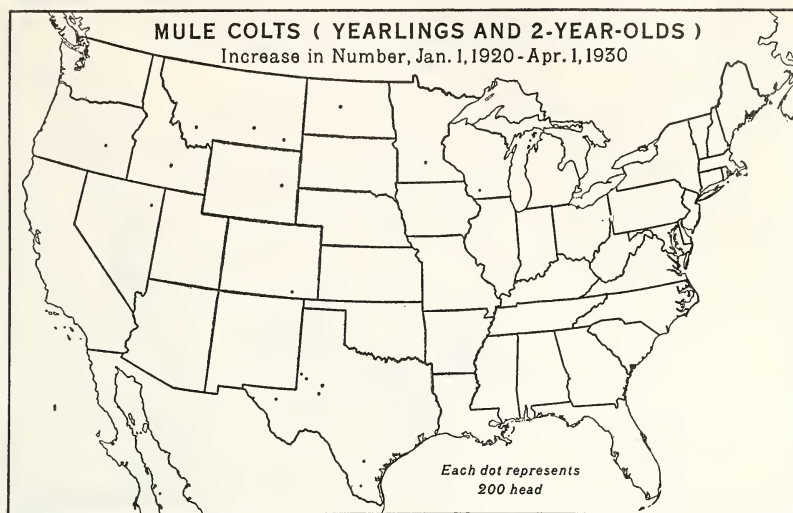
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FIGURE 22.—The increase in mature horses during the economic depression took place in different areas than the increase in colts. The greatest increase was in the rice-growing parts of Louisiana and Texas, in the lower Rio Grande Valley, in most of New Mexico, and northwestward through the intermountain region, in northern Minnesota; also around many northeastern cities, and areas in which new farms, many part-time or self-sufficing, were being established. Then the census enumeration in 1935 may have been more complete than that of 1930 in including part-time farms.



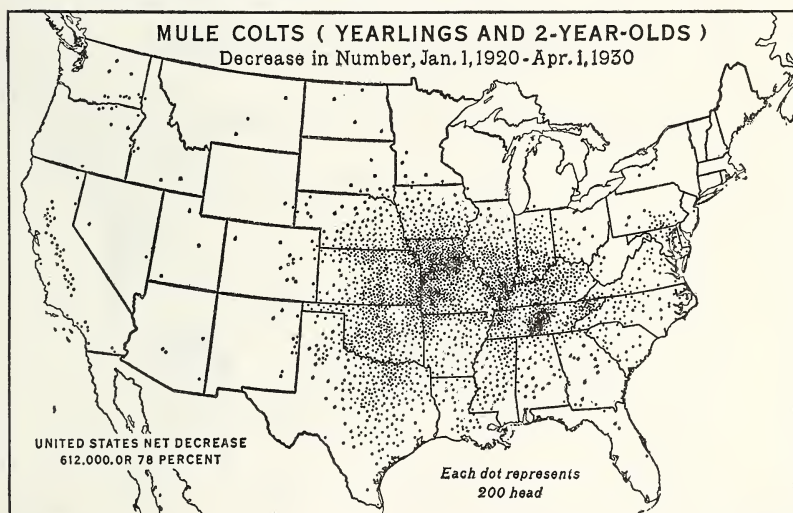
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FIGURE 23.—The rapid decrease in mature horses persisted in most parts of the United States during the depression. The greatest decreases in percentage as well as in number occurred in the Corn Belt, the Spring Wheat Belt, and the Winter Wheat Belt, with a percentage decrease almost as large in much of the Corn and Winter Wheat Belts, notably in Maryland, Delaware, and a part of southeastern Pennsylvania. The decrease was relatively heavy also in many irrigated valleys and dry-farming areas of the West. This widespread decrease must continue for some time, because not enough colts are being raised to replace the horses that die.



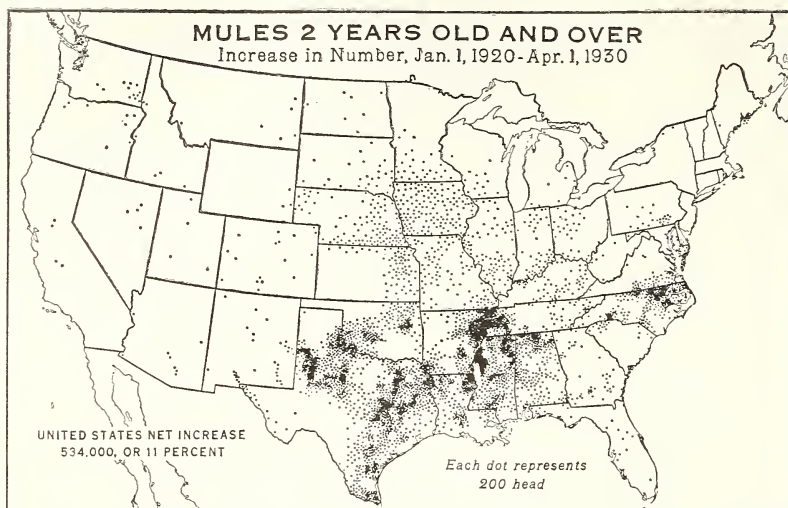
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FIGURE 24.—The decline in mule breeding during the decade before the depression was almost as universal as the decline in horse breeding. Only in a relatively few counties in western Texas and northward into the Great Plains region, where costs of production are low and crop acreage was expanding, also locally in the intermountain region, the Great Lakes States, and Wisconsin, did any material increase in mule colts occur. The blankness of the map is eloquent of the influence of the tractor and the motortruck upon the mule-breeding industry.



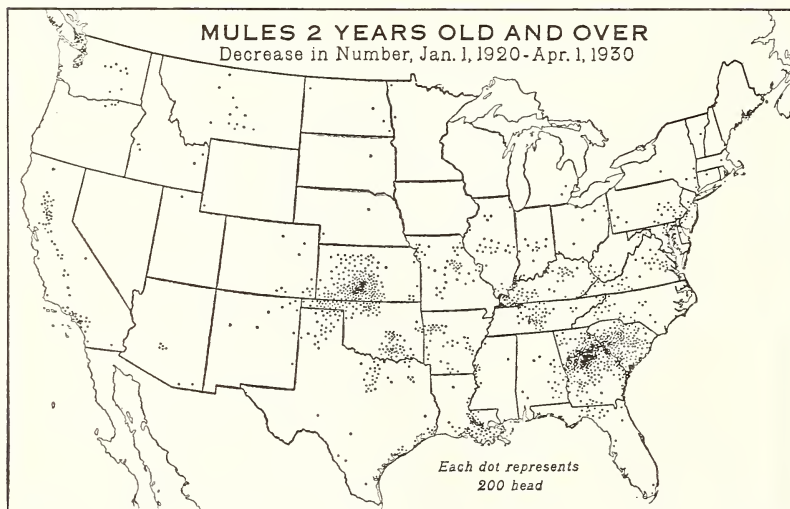
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FIGURE 25.—In practically every county of the mule-breeding region from the Carolinas and Virginia to Iowa, Kansas, and central Texas the number of mule colts decreased during the decade preceding the depression. In the United States there were only 22 percent as many mule colts in 1930 as in 1920. This was a greater percentage decrease than in horse colts (see fig. 18). In Missouri the decrease, exceeding 100,000, greatly reduced the industry. If such a rate of decline had continued during another decade the mule-breeding industry would have become practically extinct.



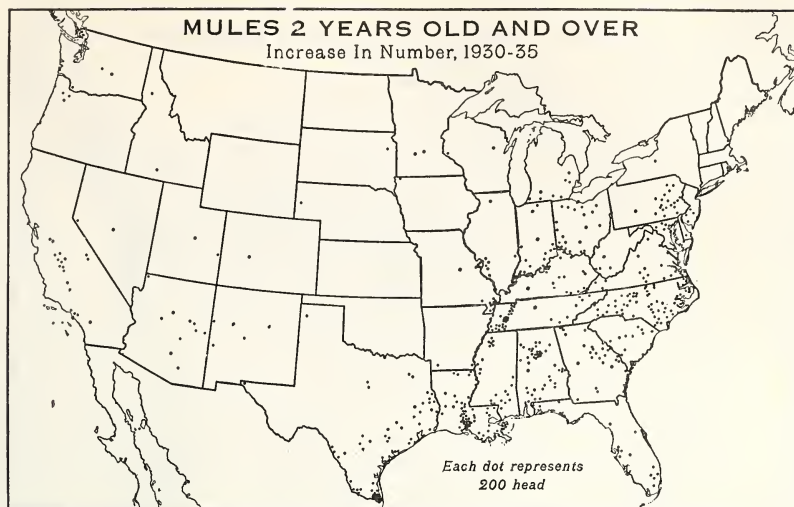
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FIGURE 26.—Work mules, unlike horses, increased in number between 1920 and 1930, but the maximum in the Nation was reached in 1926. This increase during the decade was notable in most of the Mississippi River lowlands, where drainage was in progress, indeed, in most of Mississippi, Arkansas, and Louisiana, also in most of Texas and Alabama, and in northeastern North Carolina. The increase was associated with a decrease in horses, except in western Texas, where cotton production was expanding on the Plains (fig. 19). A few mules as well as tractors replaced horses in the Corn Belt.



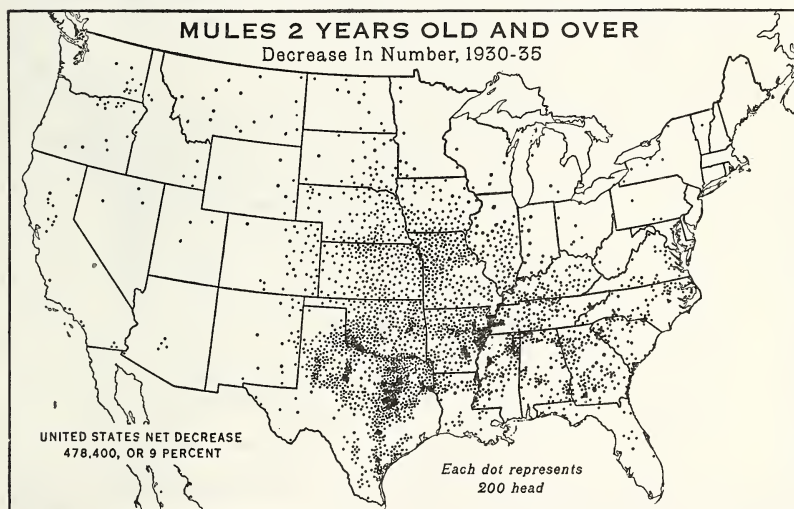
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FIGURE 27.—Decrease in work mules during the predepression decade took place in South Carolina and central Georgia, where the boll weevil, soil erosion, and other factors had induced a decrease of over 80,000 in number of farms, and in the wheat area of western Kansas and adjacent Oklahoma, where tractors were replacing both horses and mules. Local decreases occurred also in the "sugar bowl" of Louisiana, where the mosaic disease had not yet been controlled, in parts of Arkansas, Tennessee, Kentucky, and Missouri (doubtless in part consisting of colts and breeding stock) and in California.



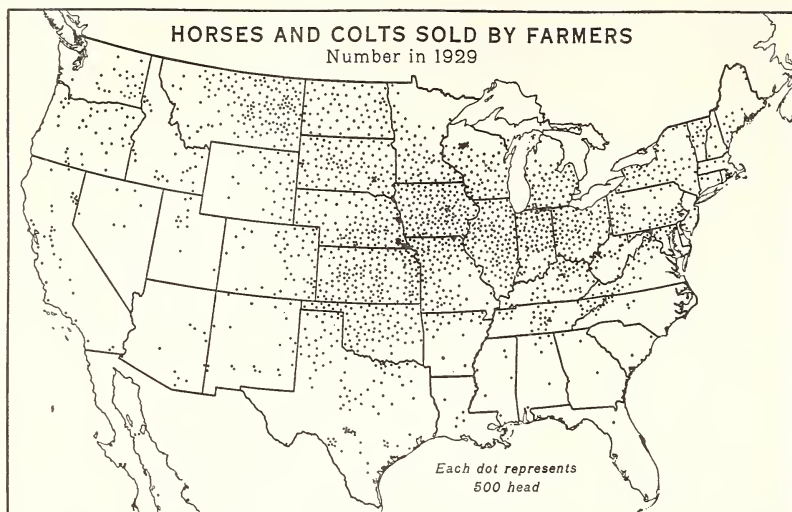
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FIGURE 28.—Between 1930 and 1935 the increases in number of work mules were local and small. The lower Rio Grande Valley of southern Texas, the eastern edge of the rice district in Louisiana, the districts surrounding Birmingham, Memphis, and northward into the strawberry growing counties, the environs of St. Louis, Louisville, and Cincinnati, where part-time and self-sufficing farms were increasing in number, reported increases. Small local increases are also indicated in counties scattered all the way from Pennsylvania and southern Michigan to Texas and California. Why these increases occurred is not clear.



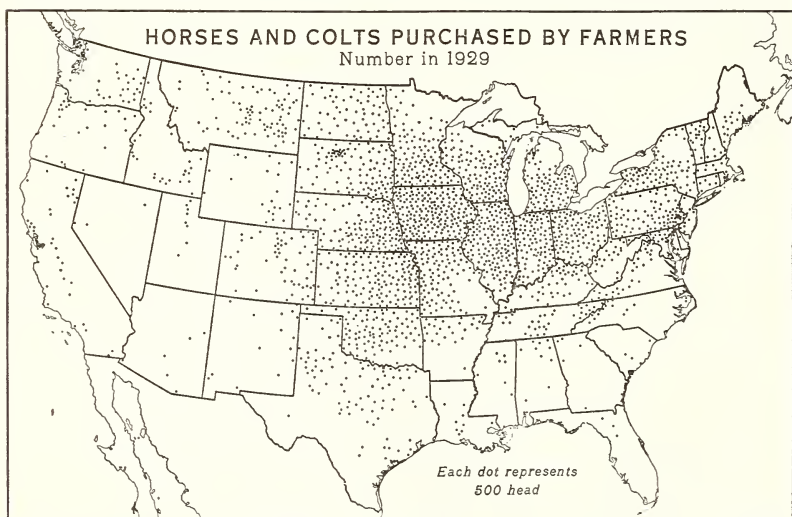
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FIGURE 29.—The decreases in work mules between 1930 and 1935, forecast by the rapid decrease in colts the preceding decade, was widespread. It extended into nearly every county of the western Cotton Belt and prairie portion of the Corn Belt, and was heavy in the black prairie of Texas and the bottom lands of northeastern Arkansas. In these areas work horses, and probably tractors, decreased during this period, suggesting a decline in power on farms. But the decline in crop acreage was noteworthy only in eastern Texas and western Oklahoma.



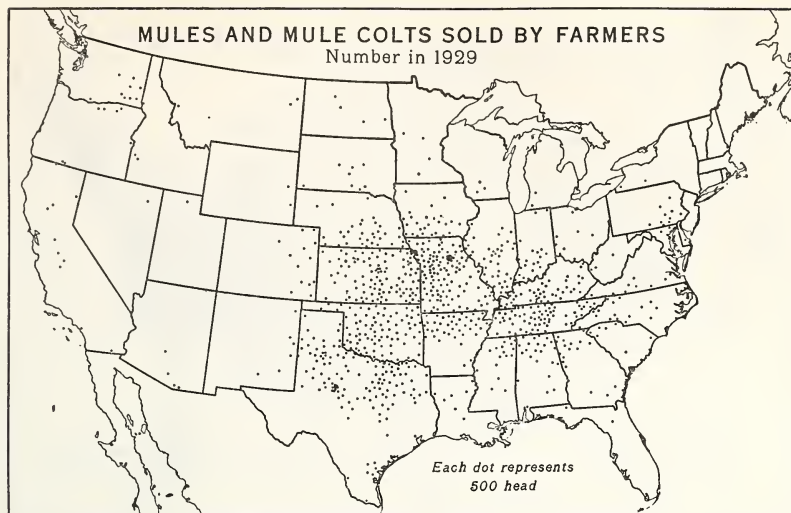
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FIGURE 30.—Horses and colts were sold by farmers in 1929 principally in areas where colts were raised—notably the Corn Belt, the Spring Wheat Belt, the Winter Wheat Belt, and the Great Plains portion of the Grazing and Irrigated Crops Belt, and were similar in number to colts raised (fig. 14). A large number of horses and colts were sold also in New England, New York, and Pennsylvania, where few colts are raised. Very few horse colts were raised or sold in the Cotton Belt, or in the Pacific coast regions.



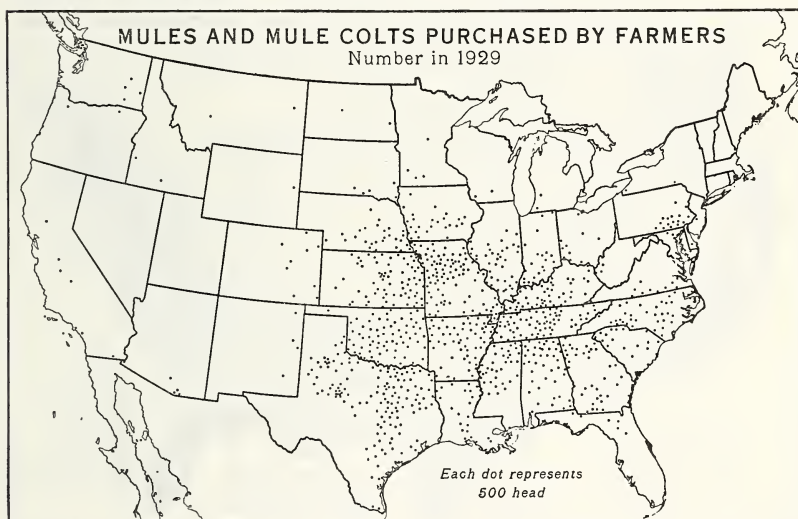
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FIGURE 31.—Purchases of horses and colts by farmers in 1929 took place in the same areas in general, as sales by farmers (fig. 30.) But the purchases greatly exceeded the sales in New England, New York, New Jersey, and Pennsylvania, in which States feed is higher in price than in the West and horses can be imported and sold more cheaply than they can be raised. In the Corn Belt States also, except Nebraska, purchases exceeded sales. But in the Great Plains region, with its cheap grazing lands, sales exceeded purchases.



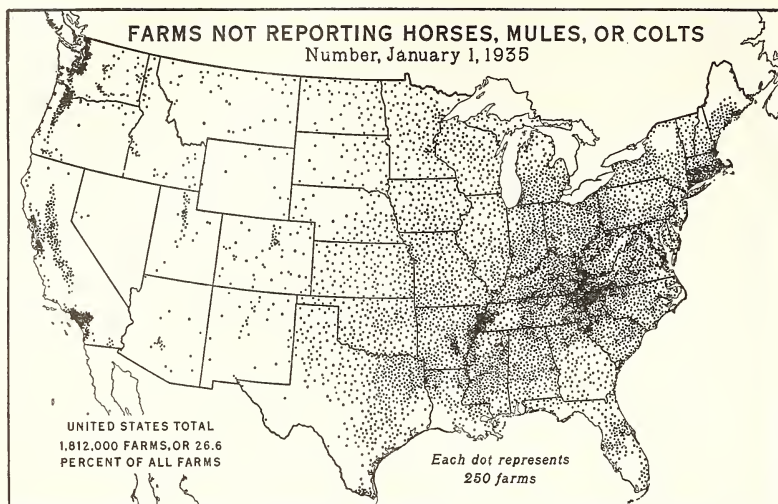
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FIGURE 32.—The sales of mules and mule colts by farmers in 1929 took place mostly in the mule-producing region, which centers in Missouri and extends eastward across southern Illinois and Indiana, Kentucky, and Tennessee to western North Carolina and northern Georgia, while to the west it includes southern Nebraska, Kansas, Oklahoma, and parts of Texas. In most of this region, with its many acres of pasture, lying between the Cotton Belt, the great market for mules, and the Corn Belt, which produces horses, the raising of mules has been carried on for a century.



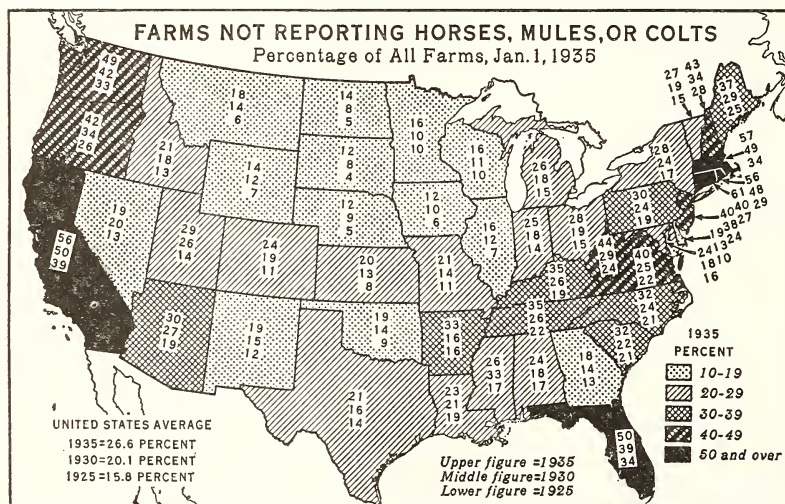
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FIGURE 33.—The purchases of mules and mule colts in 1929 took place not only in the Cotton Belt, especially along the northern margin and in eastern Texas, but also in the producing region to the north. Outlying areas may be noted in southeastern Pennsylvania and eastern Washington. The northern limit of the mule region follows fairly closely the summer temperature line of 72° F. across southeastern Pennsylvania, down the Appalachian highlands to northern Georgia, northward to southern Ohio, thence across Indiana, Illinois, Iowa, and Nebraska to eastern Colorado.



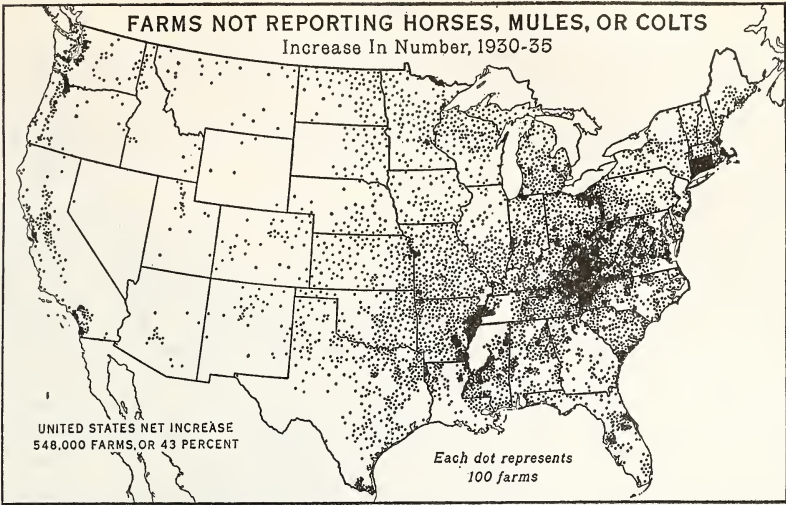
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FIGURE 34.—More than one-fourth of the farms in the country had no horse or mule, on January 1, 1935. The areas of densest distribution are in (1) southern New England and (2) the southern Appalachians, both areas containing many small part-time and self-sufficing farms, (3) the rice- and cotton-producing bottom lands of northeastern Arkansas and adjacent uplands of Tennessee, (4) the fruit, truck, and poultry producing valleys of the Pacific coast. Apparently "horseless farms" are due more frequently to small size, tenancy, or type of farming, than to exclusive use of tractors.



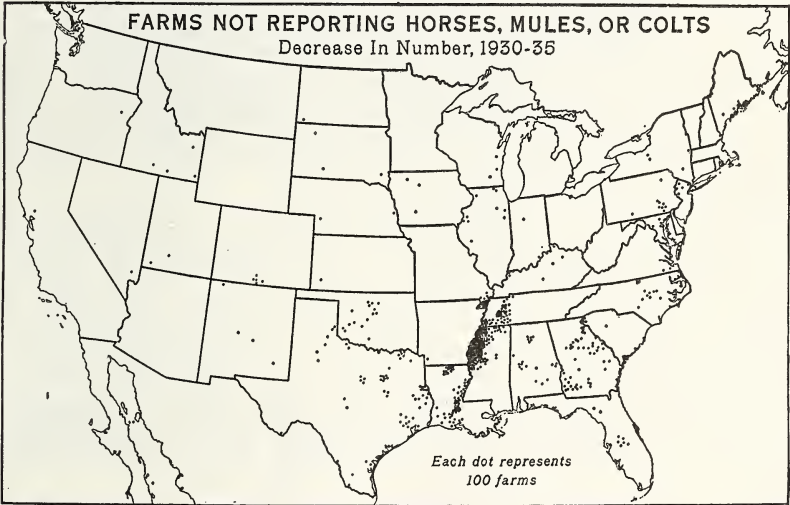
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FIGURE 35.—In southern New England, California, and Florida, half or more of the farms reported no horses or mules, January 1, 1935. In New Hampshire, the Virginias, Oregon, and Washington, the proportions were 40 to 50 percent. Evidently on many fruit, truck, poultry, part-time, and self-sufficing farms it does not pay to keep a horse or mule. In the western parts of the Corn and Dairy Belts and the Wheat Belt there were less than 20 percent of such farms. Some of these had tractors but more, probably, did not.



BAE 31491

FIGURE 36.—The increase in horseless and muleless farms between 1930 and 1935 was notable in the southern Appalachian mountains and northward to Lake Erie, in eastern Arkansas and southeastern Mississippi. The increase in Connecticut may be mostly nominal. Less dense, but surprisingly large and widespread, was the increase of such farms in the humid eastern half of the country, except in the dominantly commercial prairie portion of the Corn Belt and the most commercial portions of the Cotton Belt. A large increase occurred also in the valleys of the Pacific Coast States.



BAE 31492

FIGURE 37.—The outstanding decrease in farms not reporting horses or mules took place in the Yazoo delta of Mississippi and nearby parts of Louisiana, Tennessee, and Missouri (cotton counties). This is undoubtedly owing mostly to the decrease in croppers, caused by the conversion, perhaps temporarily, of such laborers to wage hands. The significant indication in this series of maps is the large number of farms without a horse or mule in nearly all parts of the Nation, and the large increase in such farms during the economic depression.

CATTLE

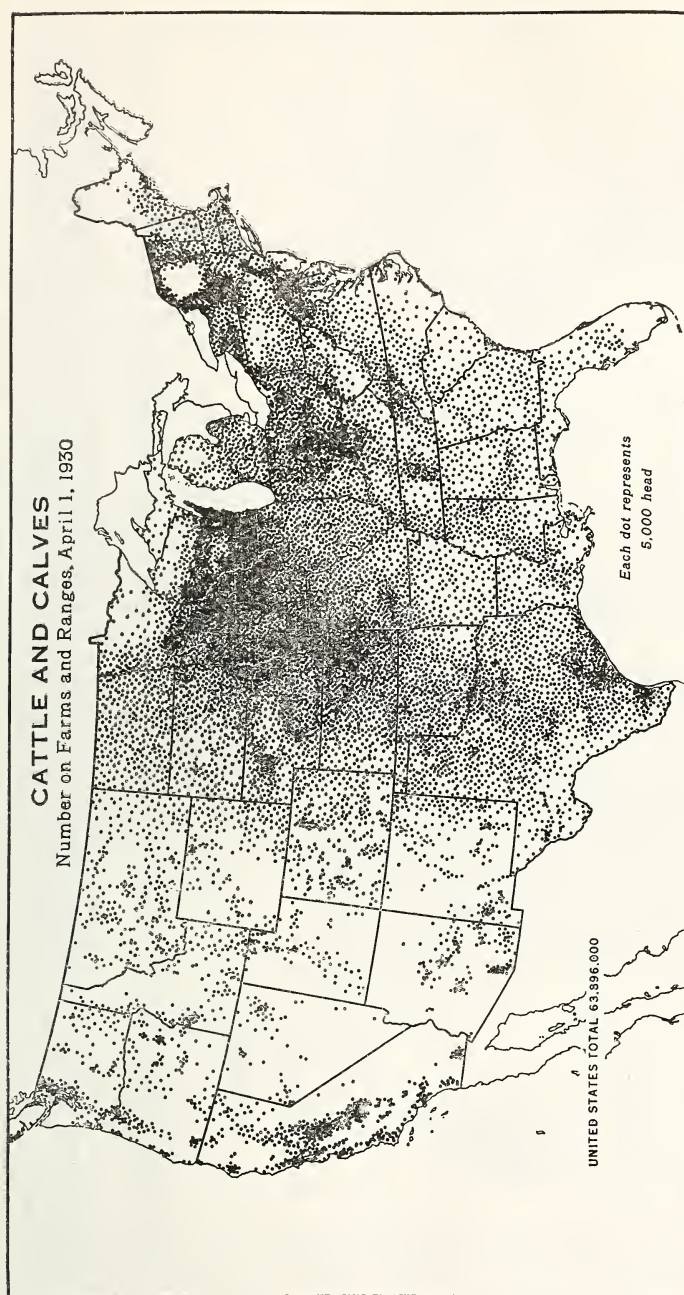
About one-third of the crop land in the United States and over two-thirds of the pasture land are used to feed cattle. The proportions have increased with the decline in number of horses and mules, and may increase further with the progress of the soil conservation program, which tends to increase the acreage of forage crops and pasturage.

The total number of cattle in the United States has increased only moderately since the beginning of the century, whereas the number of people has increased 70 percent. On January 1, 1900, the number of cattle and calves was estimated at 59,739,000. At the bottom of the cattle cycle, a few years before, the number was 49,205,000. For January 1, 1912, the bottom of the next cycle, the estimate was 55,675,000, and for 1928, the bottom of the recent cycle, it was 57,322,000. The crest of the earlier cycle was in 1904, when the number was estimated at 66,442,000; at the crest of the next cycle, in 1918, the estimate was 73,040,000, and at the crest of the last cycle, in 1934, it was 74,262,000.

The nearly horizontal trend in total cattle during the last quarter century has been accompanied by an upward trend in milk cows and downward trend in beef cattle. Moreover, the cycle is due almost wholly to changes in number of cattle kept primarily for beef. The number of milk cows increased from 16,544,000 on January 1, 1900, to 24,902,000 on January 1, 1938, according to the estimates of the United States Department of Agriculture. The increase was continuous until 1925, then the number remained almost stationary for 5 years at about 22,400,000, then rose to 26,931,000 in 1934, when, largely as a result of the drought and governmental slaughter, the number declined by 2,000,000. The number of cattle and calves other than milk cows was estimated at 43,195,000, January 1, 1900, then rose to 48,957,000, January 1, 1904, fell to 36,158,000 in 1912, rose to 51,504,000 in 1918, fell to 35,091,000 in 1928, and rose to 47,331,000 in 1934, with a decline to 41,028,000 in 1938, most of which decline took place during 1934.

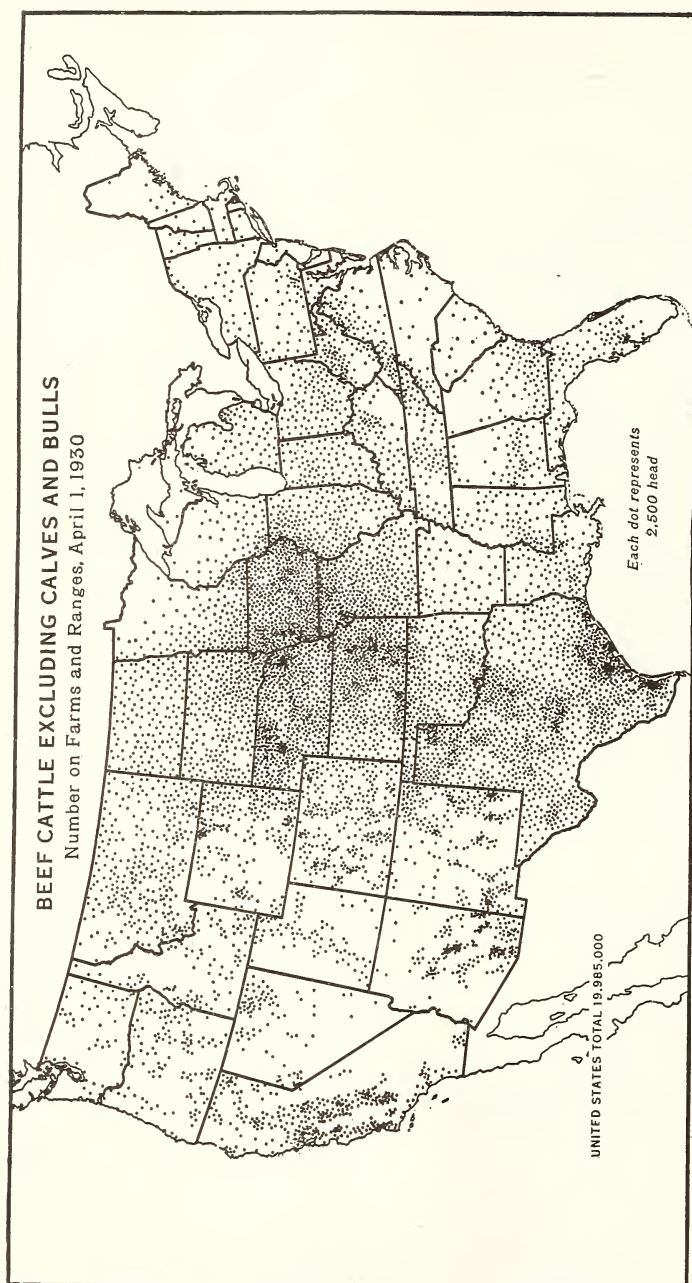
Consumption of beef per capita was about 67 pounds in 1900, rose to a peak of 74 pounds in 1909, declined to 56 pounds in 1921, rose again to 61 pounds in 1926, and then declined to 46 pounds in 1932. In 1936 it was 58 pounds and in 1937 it was 54 pounds. Per-capita consumption of veal was about 5.2 pounds in 1900, rose to 7.3 pounds in 1909, fell to 5.8 pounds in 1914, rose to 8.6 in 1924, fell to 6.3 in 1929, and was 8.4 in 1936 and 1937. Combining beef with veal, and comparing crests with crests and troughs with troughs, it appears that the increase in number of cattle has been insufficient to maintain the per-capita consumption at the level of 35 to 40 years ago.

On the other hand, the production and consumption of milk appear to have fully kept pace with the increase of population, but there have been temporary and local variations. During the World War production declined. Afterward, it rose steadily until reduced by the shortage of feed during the recent drought years. Between the 1910-14 period and 1931 or 1932, the increase in per-capita production was probably more than 10 percent. The drought of 1934 apparently has decreased production only about 4 percent.



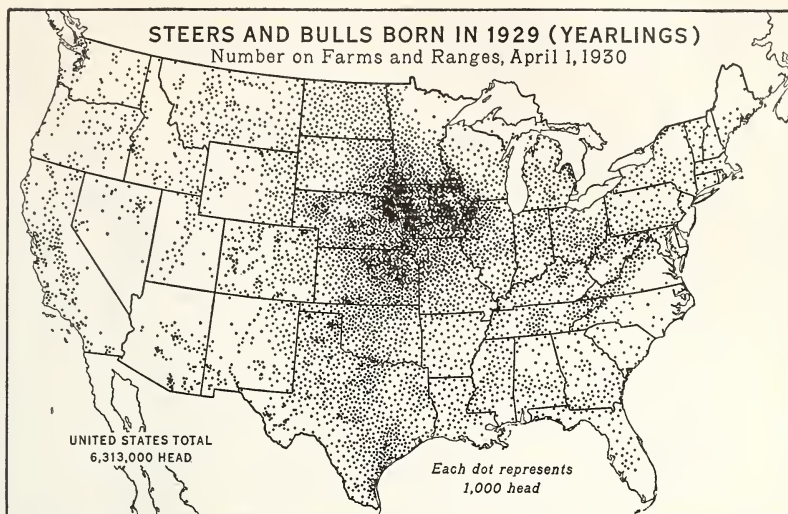
BAE 31429

FIGURE 38.—Cattle are more evenly distributed over the United States than other kinds of livestock. On April 1, 1930, there were about 14,000,000 cattle in the Corn Belt, which is 45 to the square mile; 14,000,000 in the Dairy Belt, or 38 to the square mile; 7,000,000 in the Corn and Winter Wheat Belt, or 27 to the square mile; 11,000,000 in the Cotton Belt, 21 to the square mile; and 6,000,000 in the two wheat regions, or about 23 to the square mile. The far-western regions had about 11,000,000 cattle, an average of 9 to the square mile. In Iowa there were 74 cattle to the square mile.



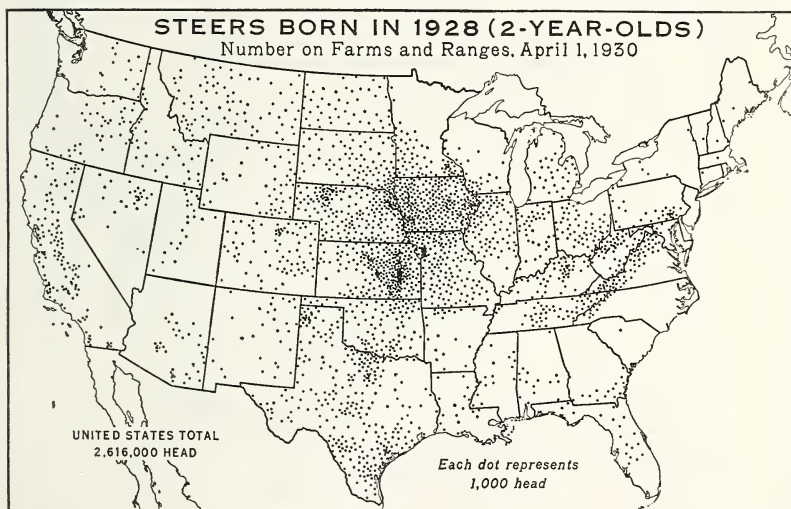
BAE 27263

FIGURE 39.—Beef cattle are most important where pasturage is cheap. Over 80 percent are located in the original grassland parts of the United States, notably in the prairie part of the Corn Belt and the Great Plains region. The coastal prairies of Texas and the grazing lands of the far West also produce many beef cattle. On the other hand, there are relatively few in the Dairy Belt of the Northeast and in the Coastal Plain and Piedmont of the Southeast north of the wiregrass grazing lands of Georgia.



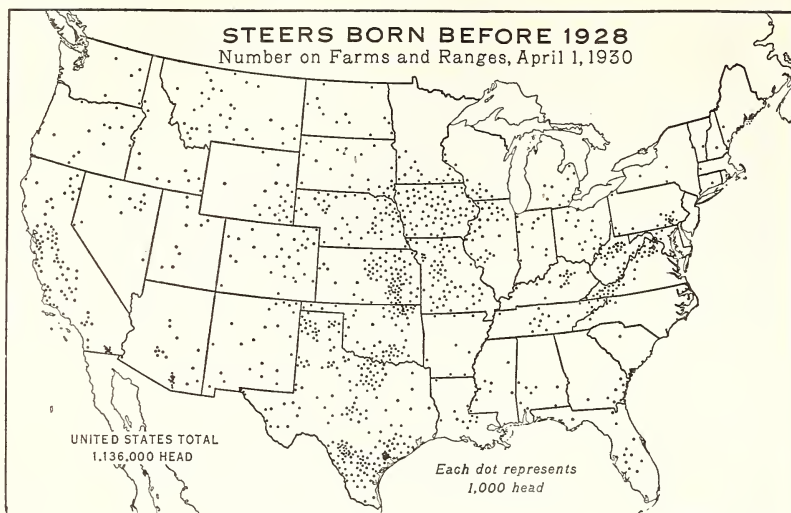
BAE 31430

FIGURE 40.—Half the total number of yearling steers and bulls were in the Corn Belt and southwesterly across Kansas, Oklahoma, and Texas. Here, in addition to the home-grown stock, many thousands animals are imported from the West to be raised and fattened on the corn and other grain and the hay and pasture. In the arid and semiarid far Western States, yearling steers are, in general, no more numerous per square mile than in the diversified, humid East; nevertheless, in most western counties cattle production is the dominant type of farming.



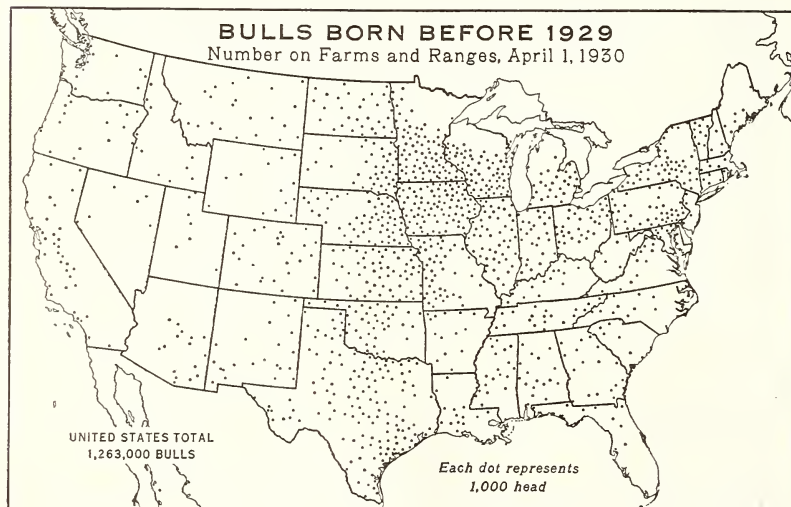
BAE 31431

FIGURE 41.—There were less than half as many 2-year-old steers as yearling steers on farms and ranges in the United States, April 1, 1930. The geographic distribution, naturally, is similar. But Clinton and Clay Counties, Mo., and the Flint Hills of Kansas stand out more strongly on this map of 2-year-old steers; and in the Pacific Coast States there were fully two-thirds as many 2-year-olds as yearlings. In the Dairy Belt and Cotton Belt, on the other hand, there are very few 2-year-old steers—milk and feed are too valuable.



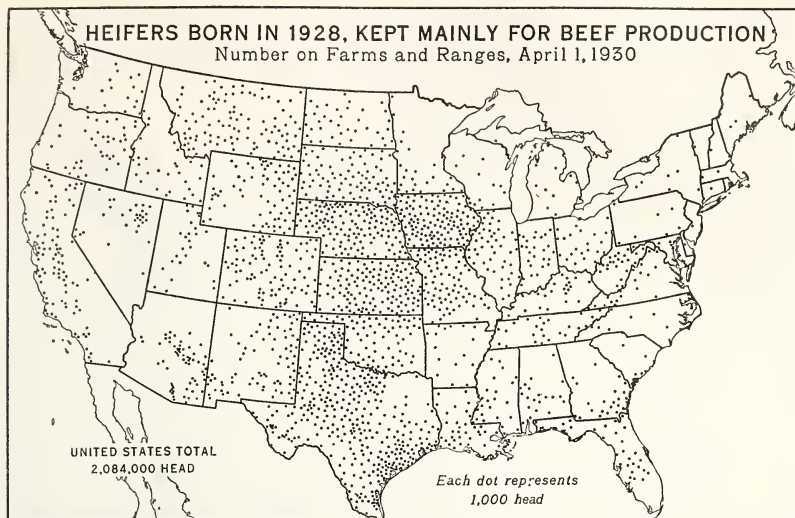
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FIGURE 42.—There were less than half as many steers over 27 months old in the United States, April 1, 1930, as steers 15 to 27 months of age, and only about one-fifth as many as steers 3 to 15 months old. These older steers, due in part to feeding practices, were most numerous in Texas and northerly to Nebraska and Iowa, with a large number in southeastern Pennsylvania and southwesterly in the valleys of the Virginias. A large number will be noted also in the valleys of California, with many in the irrigated Imperial Valley.



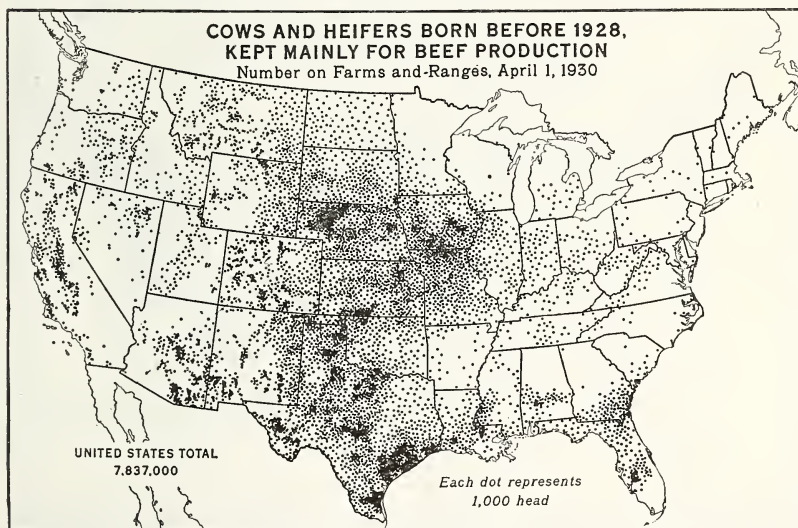
BAE 31433

FIGURE 43.—In the United States there were 50 cattle and about 30 cows and heifers, for each bull over 15 months old on April 1, 1930. The distribution of bulls in the Dairy Belt is as dense as in the Corn Belt, and the number is found large southwesterly across western Missouri and Kansas to Texas. Along the Atlantic coast from Georgia to New Jersey, where cattle are not numerous, few bulls were reported, and the number is small on the Colorado River plateaus and in the deserts to the west.



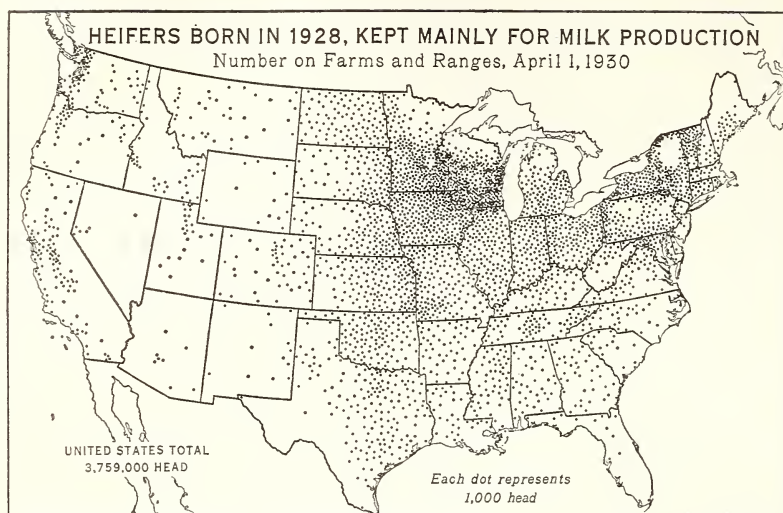
BAE 31434

FIGURE 44.—Beef cattle are raised mostly in the original grassland areas of the United States. The forest-prairie boundary, which crossed Minnesota diagonally from the northwest to the southeast corner, then southwestern Wisconsin, and continued southeasterly into Indiana, thence turned southwesterly across Illinois and Missouri to central Oklahoma and Texas, delimits approximately the eastern border of the area of heavy beef-cattle production. But there are many beef cattle on the coastal prairies of Texas and Louisiana, in the black prairie of Alabama and Mississippi, and in the valleys of Virginia, originally partly prairie.



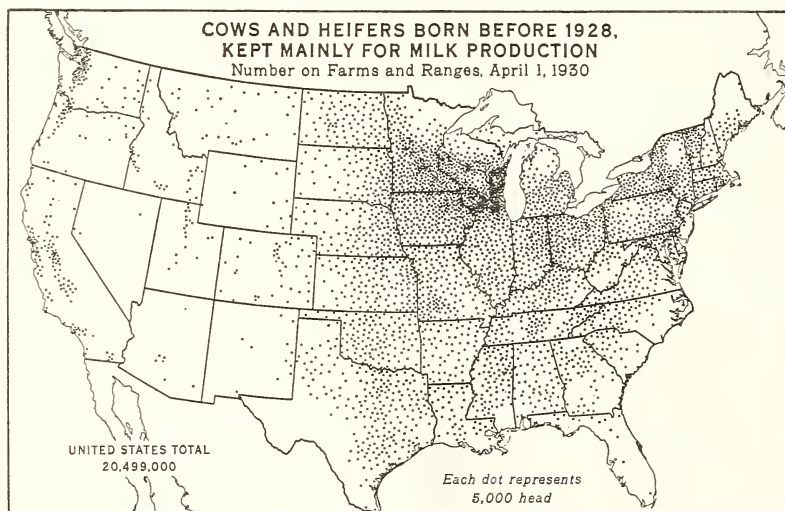
BAE 31436

FIGURE 45.—Nearly all the beef cows, like the younger heifers, are located in the original grassland areas of the country. Half are in the prairie part of the Corn Belt and the Great Plains region. The areas of greatest concentration are the coastal prairie of Texas and scattered counties northwesterly in the State, in Kansas, northern Missouri, and southern Iowa, the borders of the sand hills in Nebraska, and many irrigated areas with adjacent grazing land in the far Western States. There are also many beef cattle on the lower Coastal Plain of Georgia and Florida.



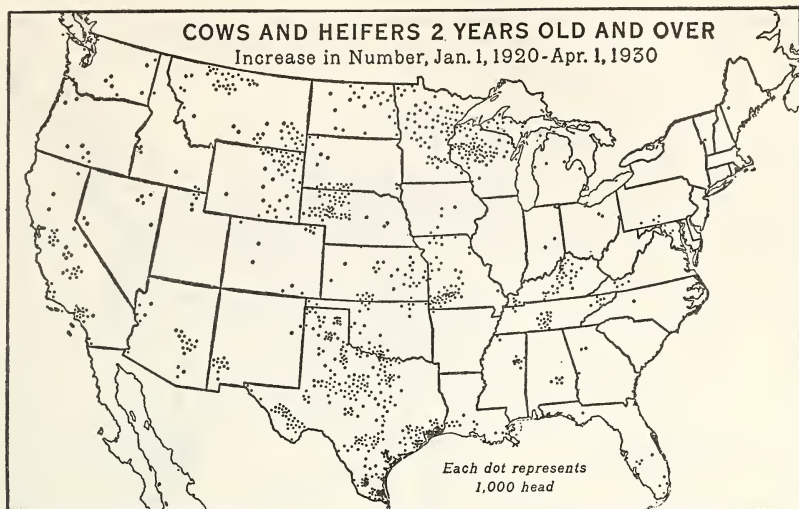
BAE 31435

FIGURE 46.—Three-fifths of the yearling and 2-year-old heifers kept for milk production were in the Dairy Belt on April 1, 1930, and in the adjacent Corn Belt. In these two regions, or near their borders, were living three-fourths of the urban, 54 percent of the rural nonfarm, and 37 percent of the rural farm population of the Nation. In Europe, likewise, extensive development of dairying is associated with large urban centers of population. There are also a considerable number of dairy heifers in the valleys of Virginia, Tennessee, southwestern Missouri, and in the Pacific Coast States.



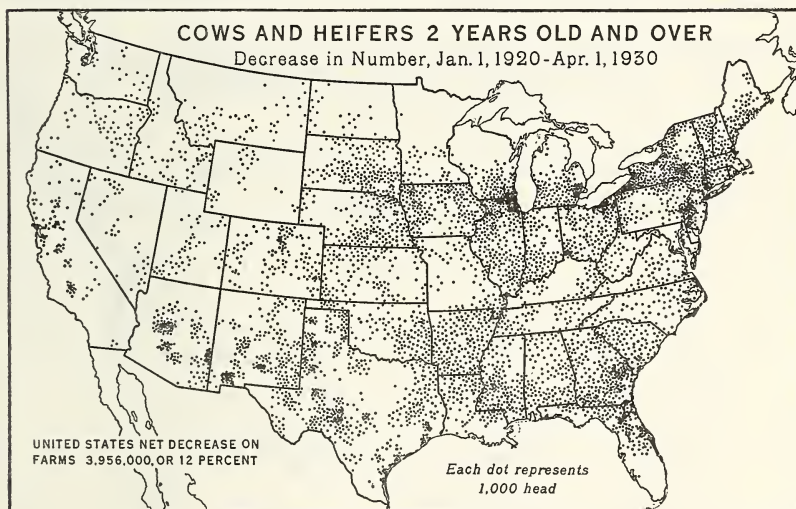
BAE 31618

FIGURE 47.—About half the dairy cattle in this country are in the Dairy Belt and the adjacent northern and eastern margins of the Corn Belt. Other dense areas will be noted in the valleys of the Pacific Coast States. In the Cotton Belt, especially the northern part, dairy cattle are more numerous than beef cattle, but in most of the Grazing and Irrigated Crops Belt they are much less numerous. Nine-tenths of the dairy cattle are in the humid eastern half of the country.



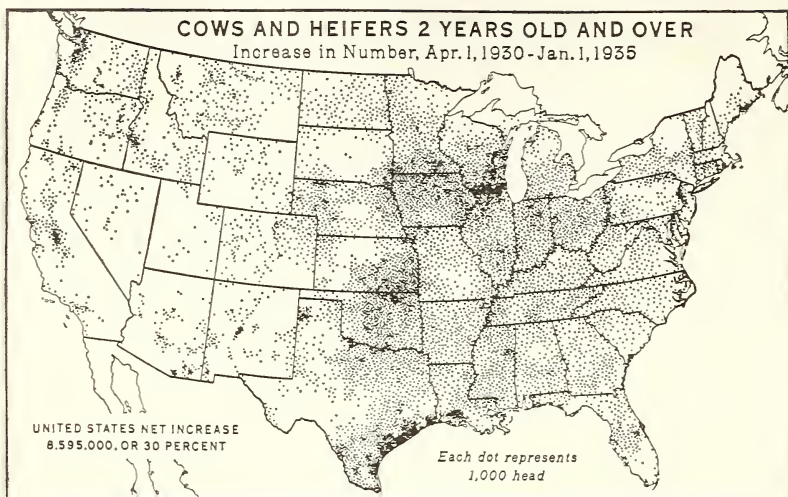
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FIGURE 48.—The increase in cows and heifers, 2 years old and over, between 1920 and 1930 occurred mostly in the Great Plains, the Great Lakes States, and locally in Kentucky, Tennessee, and Missouri. In only two States is a net increase indicated—Minnesota and Wyoming. From Minnesota to New England most of the cattle are dairy cattle, yet no increase is shown, except in the upper Great Lakes area, despite the increase in milk production, which was notable in Wisconsin and southern Minnesota (fig. 74).



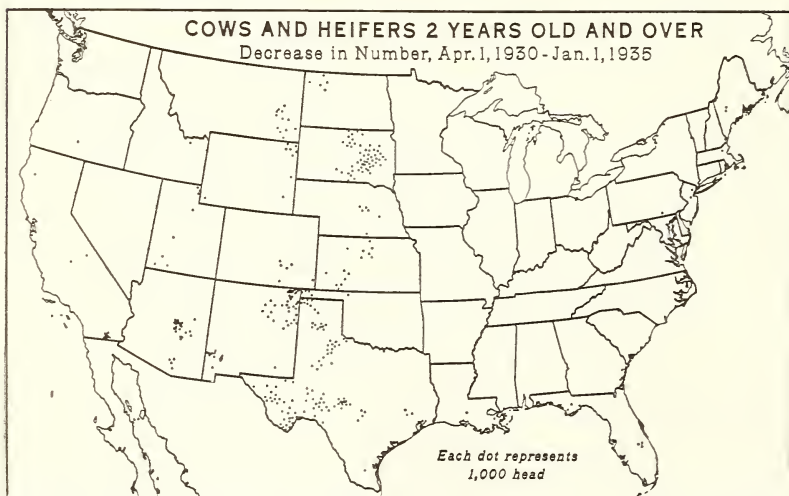
BAE 1219YB

FIGURE 49.—The decrease in cows and nearly mature heifers between 1920 and 1930 was almost universal in the eastern, originally forested portion of the United States, which is largely a feed-deficit region, except in the upper Great Lakes area. A notable decrease occurred also in the Corn Belt and in the southwestern desert region. The decrease was least in the Corn and Winter Wheat Belt extending from eastern Kansas to Virginia, a region characterized by small farms and partly self-sufficient farming. The crest of the cattle cycle was in 1918 and the trough in 1928.



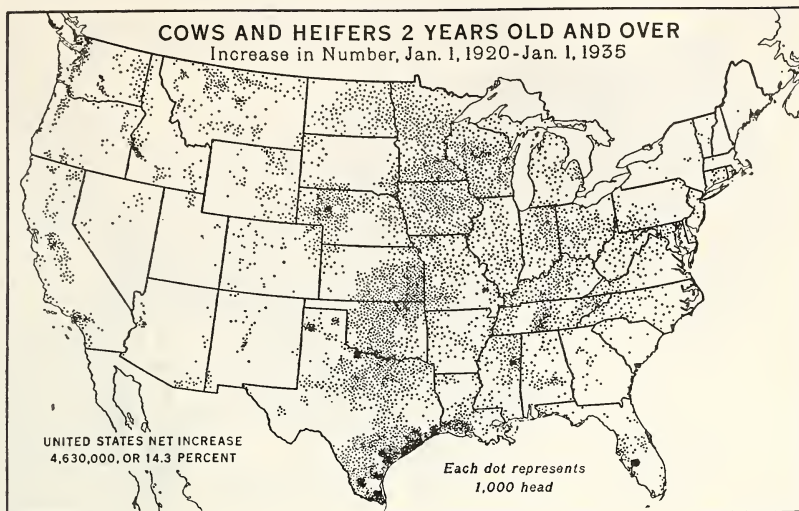
BAE 29545

FIGURE 50.—The increase in number of breeding cattle between 1930 and 1935 was almost universal, and was especially large in southern Wisconsin and the Corn Belt, except the Missouri and central Nebraska portions; it was large in southeastern Kansas, eastern and central Oklahoma, and the Gulf coast of Texas. The percentage increase, however, was greater in most of the Southern States and the four States in the extreme Northwest. The year 1930 was 2 years removed from the trough of the cattle cycle, and 1935 was 1 year after the crest.



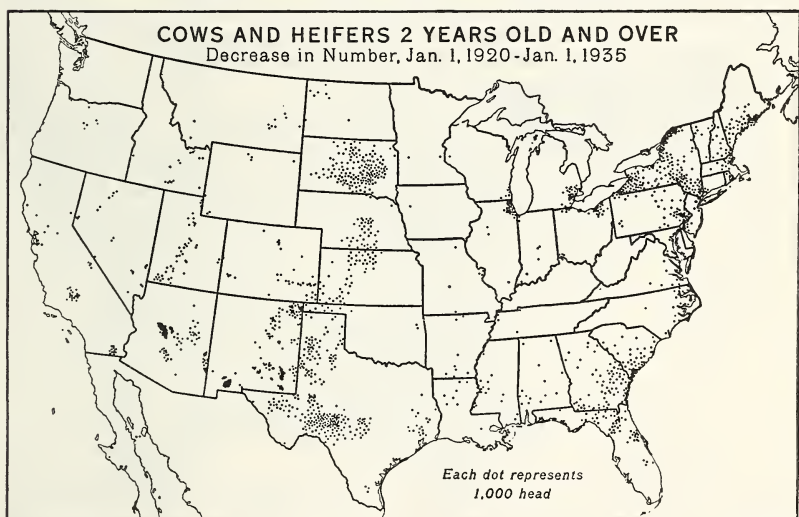
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FIGURE 51.—The decrease in cows and heifers between 1930 and 1935 was found mainly in the worst drought-stricken part of the Great Plains and some irrigated valleys of Arizona and California. The almost universal increase in breeding stock during this period of economic depression and drought was a surprise to many people, but statistics indicate that cattle numbers may increase as greatly during periods of depression as during periods of prosperity.



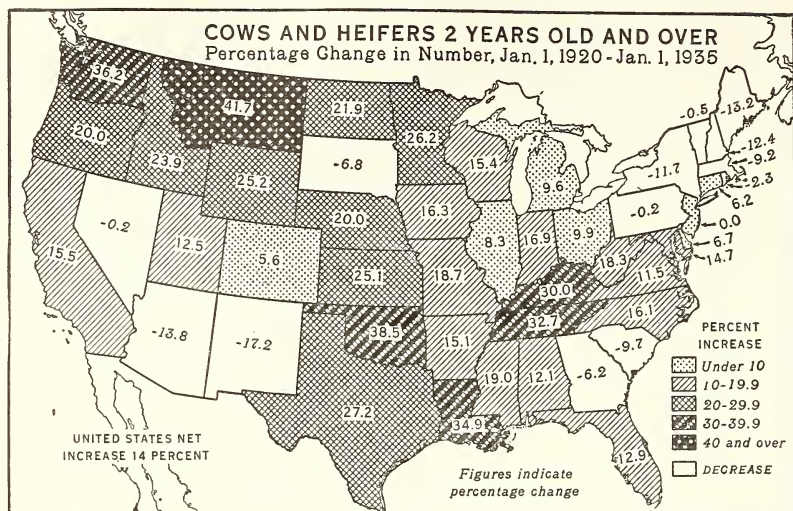
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FIGURE 52.—The census was taken on January 1 in both 1920 and 1935, hence the returns are comparable relative to seasonal fluctuations. The increase in cattle of breeding and milking stock was widespread during these 15 years, which almost correspond with the cattle cycle. The increase was notable both in the dominantly dairy region of Wisconsin, Minnesota, and northern Iowa, and in the dominantly beef cattle region of Texas, Oklahoma, and southern Kansas. Lesser increases occurred almost throughout the Corn Belt and in the Corn and Winter Wheat Belt to the south.



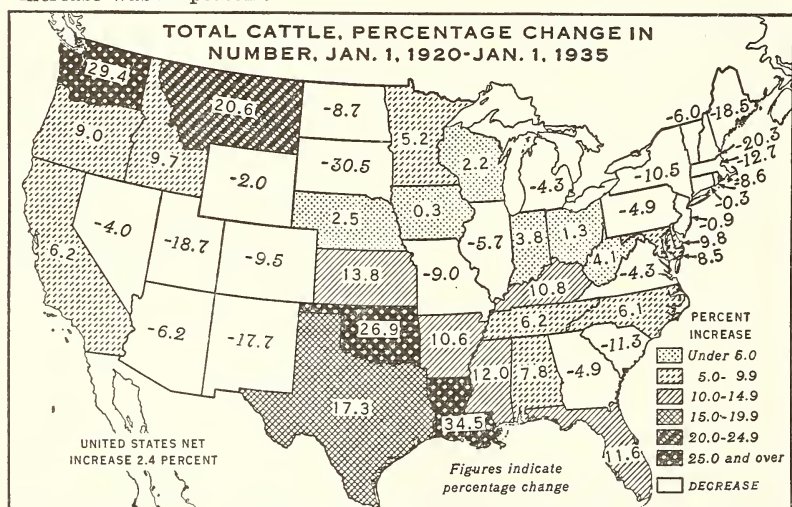
BAE 29645

FIGURE 53.—The decrease in cows and nearly mature heifers between 1920 and 1935 occurred principally in the northeastern dairy States, except Connecticut, around the cities of Cleveland, Detroit, and Chicago, where residential expansion occurred, and in parts of the Great Plains region. Doubtless the decline in parts of the Plains region is ascribable to drought. Lesser decreases will be noted in several desert grazing and irrigated counties of the Southwest, probably also ascribable to drought, and in the Coastal Plain of South Carolina, Georgia, and Florida.



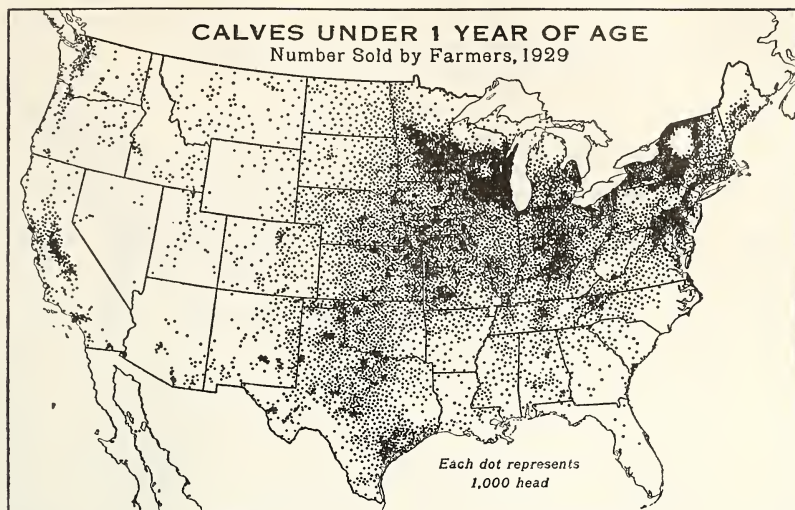
BAE 32067

FIGURE 54.—The greatest percentage increase in breeding and milking stock between 1920 and 1935 occurred in Kentucky and Tennessee, Louisiana, Oklahoma, Montana, and Washington. Despite the severity and persistence of the drought in the Great Plains, every State in this region, except South Dakota and Colorado, reported an increase in breeding stock of 20 percent or more. State decreases were confined to New England, excluding Connecticut, New York, Pennsylvania (practically stationary), South Carolina, Georgia, New Mexico, Arizona, and Nevada (very slight). The net national increase was 14 percent.



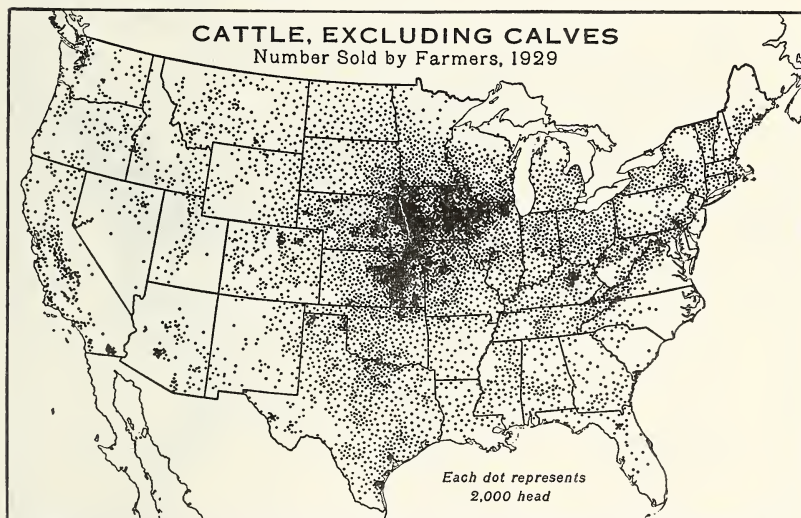
BAE 31649

FIGURE 55.—The percentage increase between 1920 and 1935 in cattle of all ages was not nearly so great nor so general as that in breeding or milking stock. Only in Louisiana, Oklahoma, Montana, and Washington did the increase exceed 20 percent, and in all the Northeastern States, Virginia, South Carolina, Georgia, Michigan, Illinois, Missouri, the Dakotas, and the southern Rocky Mountain States decreases occurred. These decreases almost balanced the increases in the other States. But it is surprising that the severity of the drought in 1934 had not resulted in a much greater and more general decrease.



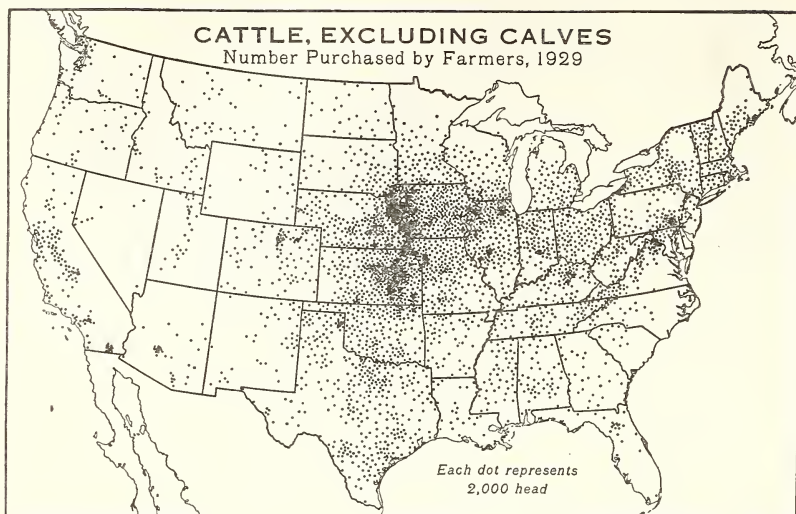
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FIGURE 56.—The number of calves sold in 1929 was greatest in the Dairy Belt of the Northeastern and Great Lakes States, but many counties of equal density of sales can be seen in the dominantly beef-cattle region that extends from Illinois and Iowa southwesterly to the Rio Grande River. Large numbers of calves were sold also in Ohio and Indiana, and in the limestone areas of Kentucky, Tennessee, and the Virginias, and in California and the valleys of the north Pacific coast.



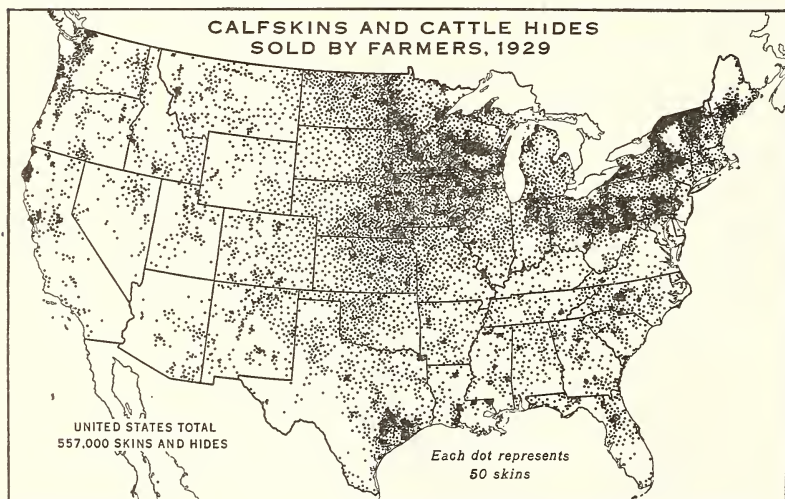
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FIGURE 57.—Sales of cattle, excluding calves, were most numerous in the beef-production area of the western Corn Belt, and adjacent Flint Hills of Kansas. Lesser centers will be noted in southeastern Pennsylvania and the limestone valleys of Virginia, the limestone bluegrass sections of Kentucky and Tennessee, and many irrigated districts of the West. A large majority of the cattle sold were from the original grassland parts of the country. Pasture is, in general, by far the cheapest feed. In the Southeast, where feed is costly and pastures are generally poor, few cattle are sold.



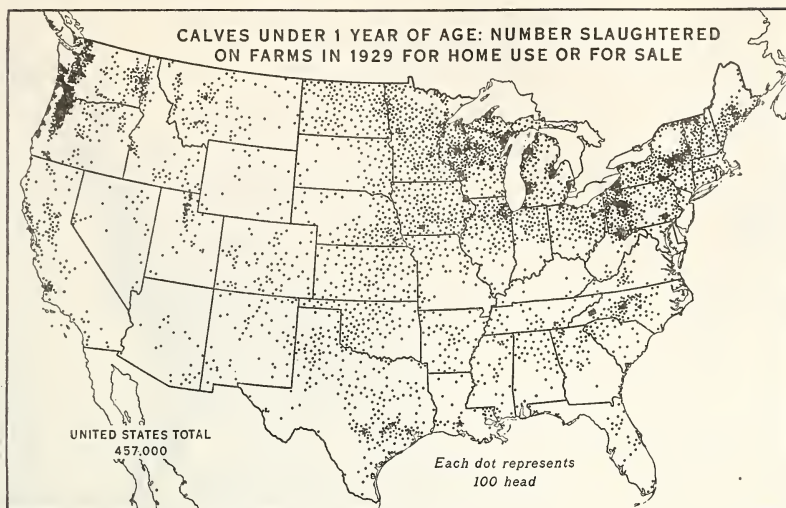
BAE 31455

FIGURE 58.—Farmers, in 1929, bought more than half as many cattle, excluding calves, as they sold. The purchases, apparently mostly for feeding, were greatest in the same areas as the sales, notably the western Corn Belt, especially the Missouri Valley, and the Flint Hills of Kansas. Smaller centers will be noted in the limestone areas of the East and irrigated districts of the West. Sales equaled or exceeded purchases in the Dairy Belt of the Northeastern and Lakes States.



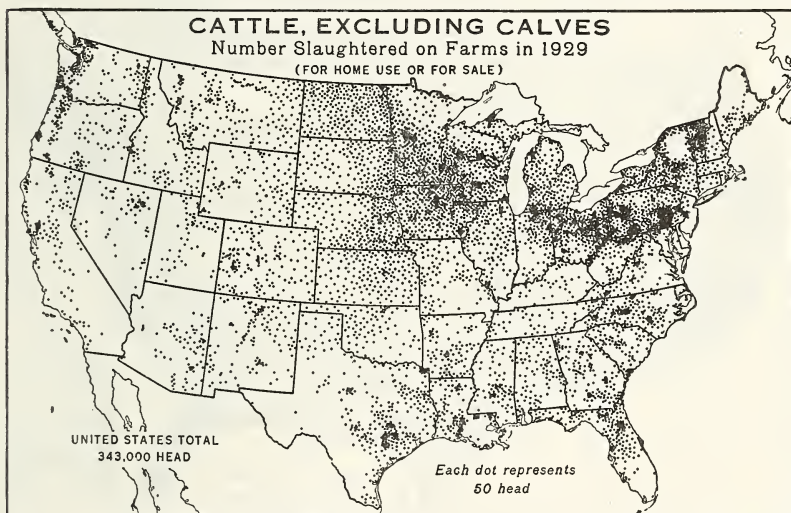
BAE 31456

FIGURE 59.—The small extent of farm slaughter in the United States is suggested by the low ratio of 2 percent between calfskins and cattle hides sold by farmers in 1929, and the number of cattle and calves sold. Some farmers may have forgotten to report all sales. The number of calfskins and cattle hides sold was greatest in the Dairy Belt and along its southern and western margins. Many were sold in the dairying districts of the North Pacific coast. Smaller centers of such sales are shown in the South, with a large center in southern Texas.



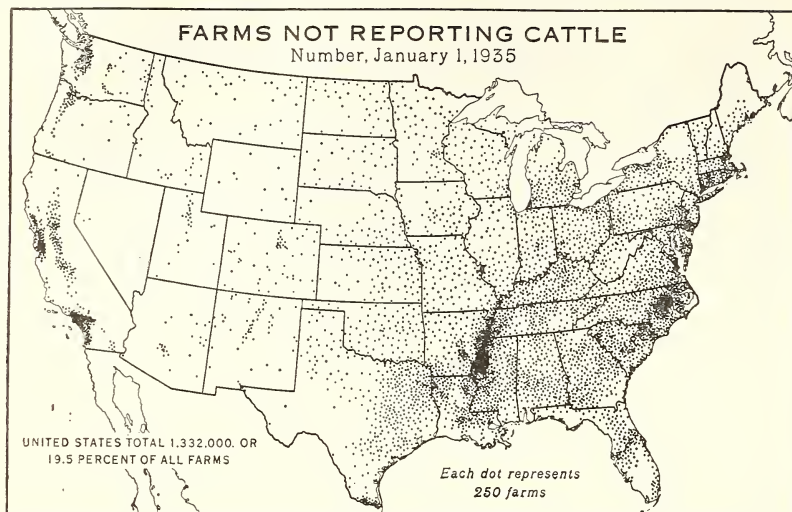
BAE 31438

FIGURE 60.—Calves are slaughtered on farms, for home use or for sale, mostly in the Dairy Belt of the Northeastern and Lakes States, and in the dairy districts of the North Pacific coast. In the northeastern Dairy Belt great differences in extent of farm slaughter apparently exist in adjacent counties. In the mixed dairy- and beef-producing areas such slaughter of calves on farms is less frequent, and in the Coastal Plain of the southeastern States and in the Corn and Winter Wheat Belt, it practically does not occur.



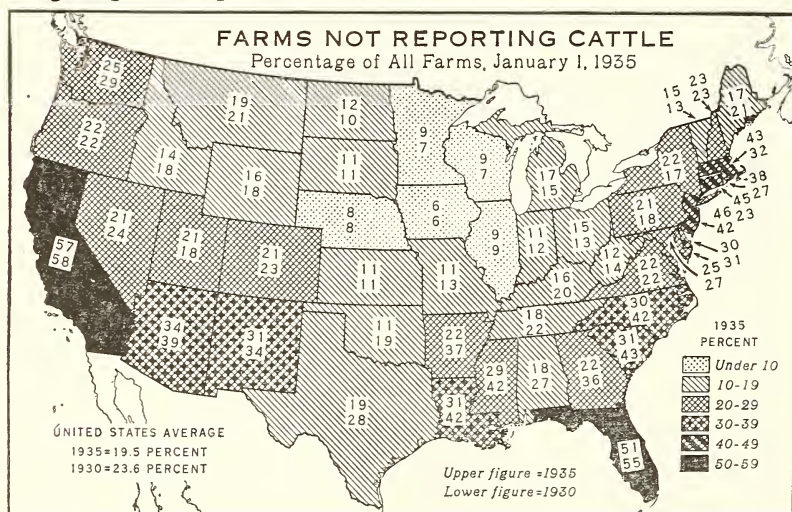
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FIGURE 61.—The farm slaughter of cattle, excluding calves, is most numerous in the Dairy Belt and along its southern and western margin, notably in Pennsylvania, Ohio, northeastern Indiana, and most of Iowa, Nebraska, and the Dakotas. There are also many counties in the Cotton Belt and the Gulf Coast States where the practice is locally common. But, surprisingly, this farm slaughter appears to be uncommon in Missouri, Kentucky, Tennessee, and much of the Virginias, where self-sufficing farming is more common than in most other sections.



BAE 32577

FIGURE 62.—About one-fifth of all the farms in the Nation, including cropper holdings in the South, reported no cattle on January 1, 1935. Such farms or holdings were most numerous in the tobacco-growing area of the Carolinas, the cotton-growing Yazoo delta of Mississippi and adjacent counties, and the fruit-growing districts of California. These are areas of small farms or holdings and of crops requiring much hand labor. The original forested part of the Nation contains most of the farms not having cattle, while the original grassland portions have few such farms.



BAE 32512

FIGURE 63.—In the fruit-growing States of California and Florida, more than half the farms or tenant holdings reported no cattle in 1935 or 1930. In southern New England and New Jersey, where fruit, truck, and part-time farms are numerous, the percentage was almost as high in 1935; in the Carolinas and Louisiana it was almost as high in 1930. At the other extreme, the western Corn Belt, Wisconsin, and Minnesota reported less than 10 percent of such no-cattle farms. The proportion diminished notably in the Cotton Belt between 1930 and 1935, and increased in most of the North-eastern States.

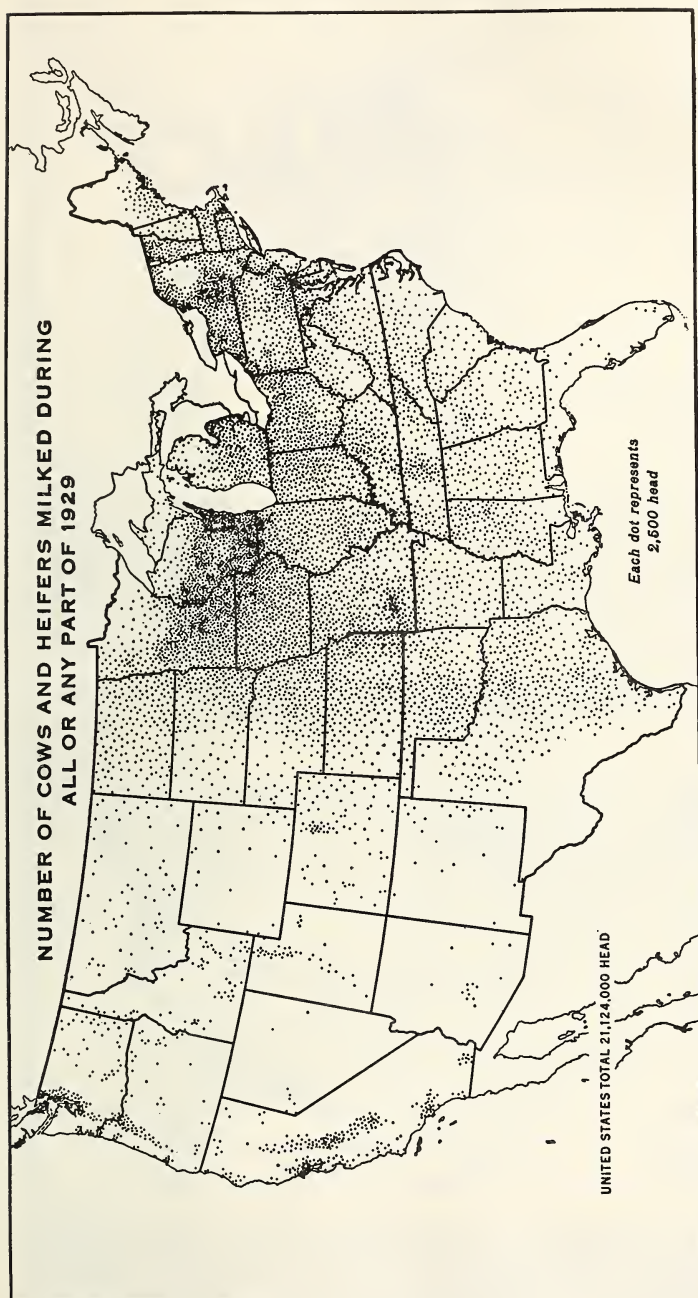
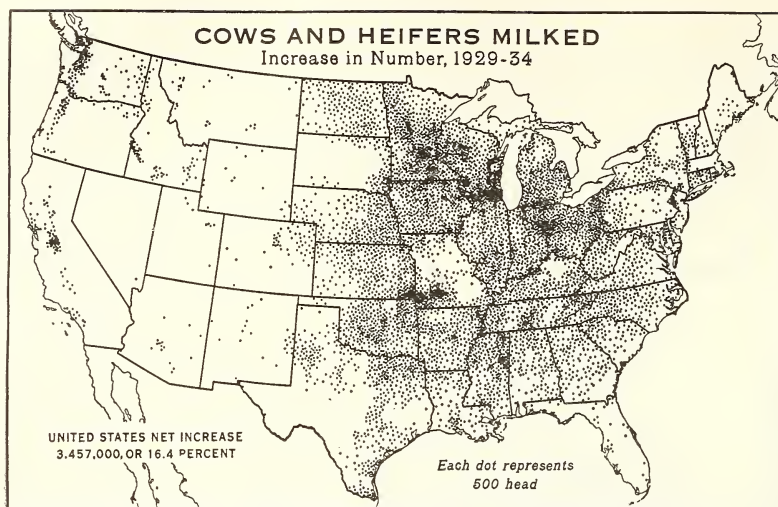
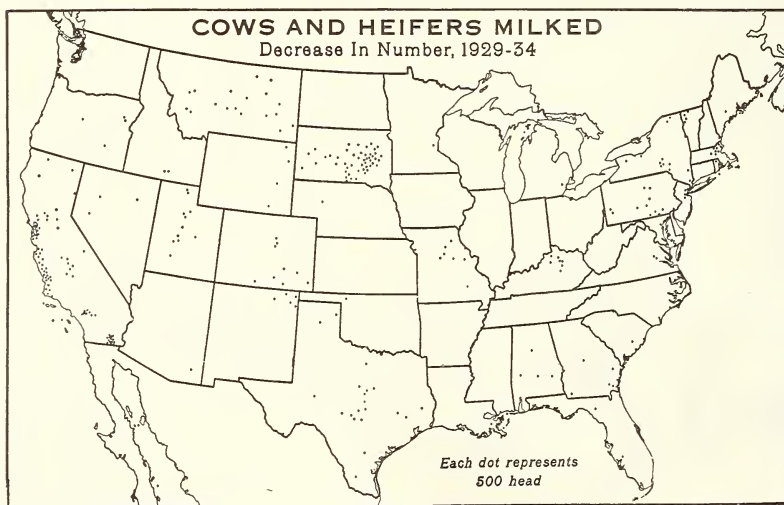


FIGURE 64.—Southern Wisconsin has the greatest number of milk cows per square mile, followed closely by southeastern Minnesota, northeastern Iowa, New York, and Vermont. In these States and adjoining districts, and along the Pacific coast and in the irrigated valleys of the West, nearly all the cows milked belong to the dairy and dual-purpose breeds and most of them are in fairly large herds kept for the commercial production of milk and cream. Outside of the main dairy States and limited areas elsewhere, most of the cows are in rather small herds and a large proportion of them are kept to supply the milk and other needs of the families on the farms, and to produce calves.



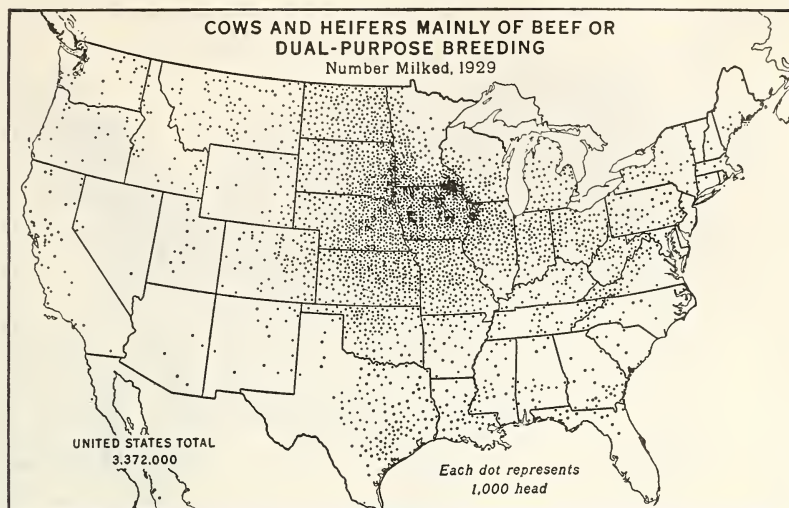
BAE 31818

FIGURE 65.—During the depression the increase in cows and heifers milked was almost universal, except in the worst drought-stricken parts of the Great Plains and in parts of California. For the entire country the net increase was 16 percent, as compared with 4 percent increase in number of people in the Nation and about 5 percent increase in the farm population. Most of the increase in cows milked occurred in the humid eastern half of the country, notably along the southwestern margin of the Dairy Belt and in southwestern Missouri.



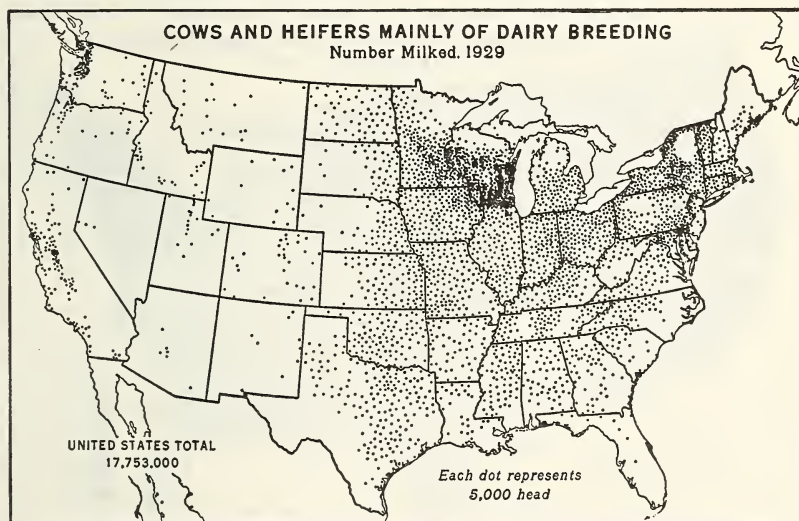
BAE 31819

FIGURE 66.—The decrease between 1929 and 1934 in number of cows and heifers milked was small and scattered. In a few counties in the Northeastern States a decrease is indicated, and in a few counties in the South; but most of the decrease was in the West, and can be ascribed to the drought, except that other factors may account for some of the decrease in California. Even in the West the increase was notable in the great valley of California and in the North Pacific States (fig. 65).



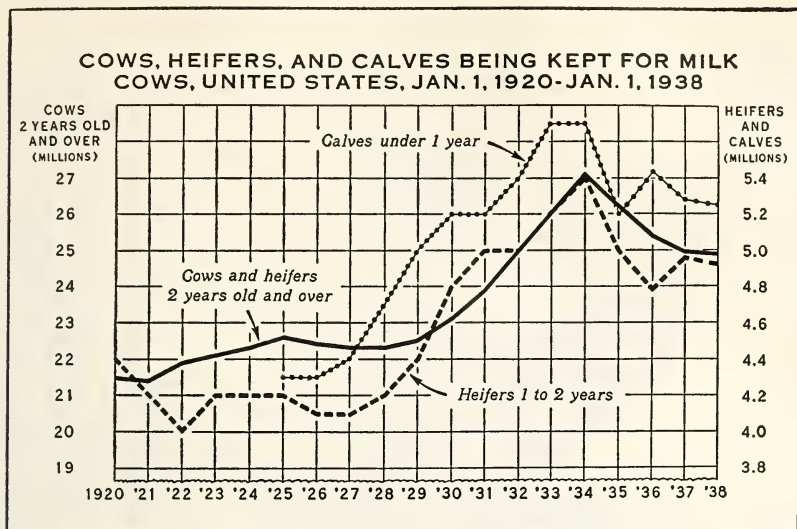
BAE 31497

FIGURE 67.—Cows and heifers of beef or dual-purpose breeding that are milked are located mostly in the original grassland parts of the Nation, like total beef cattle (fig. 39); but, unlike total beef cattle, there are relatively few in the Southwest and the far West. The milking of such cows is most common in the western Corn Belt, notably Iowa, and the Wheat Belt of the Great Plains. In addition to the milk cows reported as of "beef or dual purpose breeding" there are a considerable number of cows that are of mixed beef and dairy breeding.



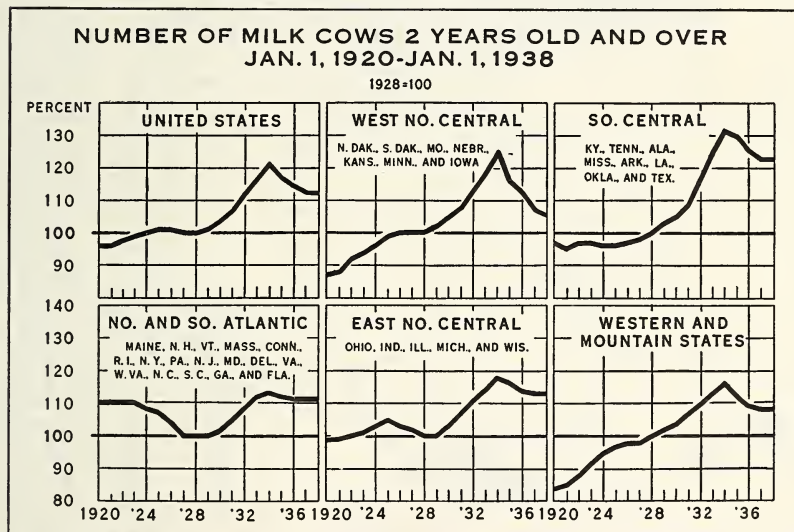
BAE 31498

FIGURE 68.—Cows milked, excluding those of beef or dual-purpose breeding, are most numerous in the Dairy Belt, notably in Wisconsin and Minnesota, New York, and Vermont. Outside these States there is a fairly dense distribution southwardly to the Potomac and Ohio Rivers, and beyond in the better-soil areas; while to the west such cows are numerous as far as the zone where crop production becomes less important than pasturage. Cows of dairy breeding—or of beef breeding—cannot range over a large acreage of semiarid land and produce enough milk to be profitable.



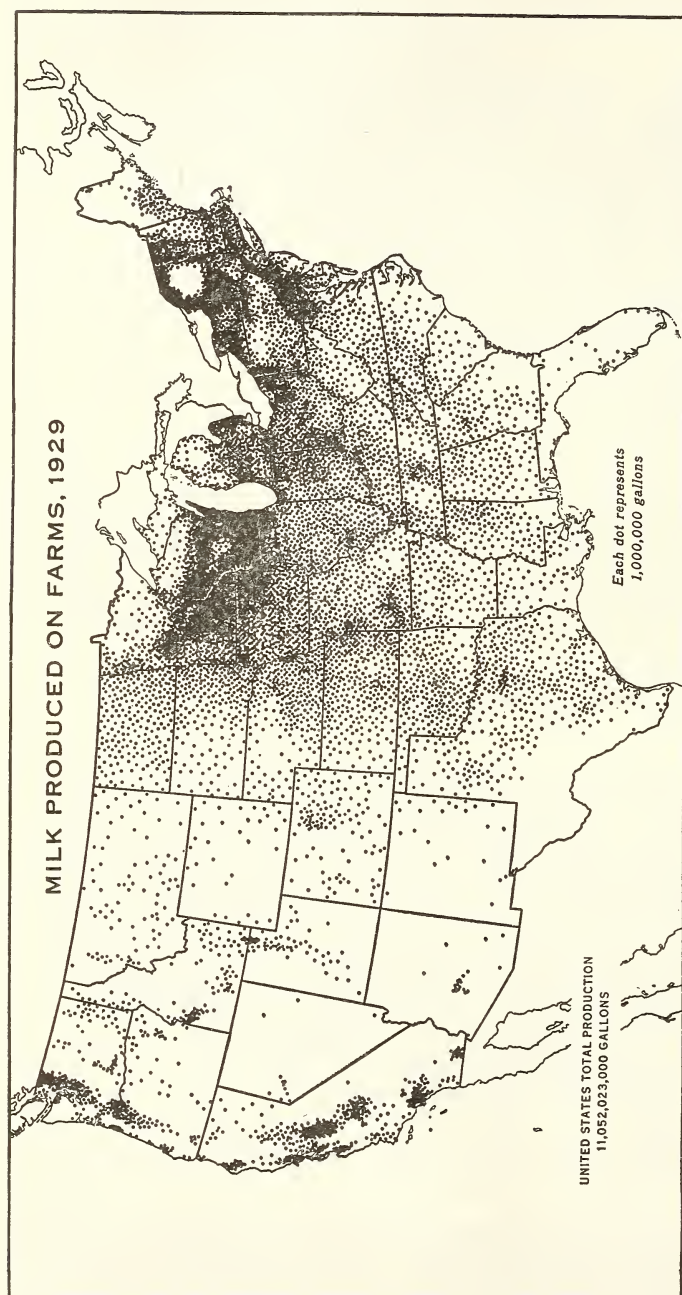
BAE 18524

FIGURE 71.—Milk cows and heifers increased rapidly during the depression years in the Nation as a whole and in most of its sections. Calves began to increase during 1926, heifers 1 to 2 years of age during 1927, and cows and heifers 2 years old and over increased slightly during 1928. By contrast, all three age classes of stock declined notably in number during 1934, principally because of drought. The increase in calves during 1935 was reflected in an increase in yearling heifers during 1936, and should soon induce an increase in milk cows.



BAE 22167

FIGURE 72.—The increase in number of milk cows was in progress in the West North Central and far Western States as early as 1920, but did not start in the South Central States until 1925. A recession occurred for several years before 1928 in the East North Central and the Atlantic States. January 1, 1934, was about the peak in all these groups of States, and the number of cows was still declining during 1936, in the States not afflicted with drought in 1934, as well as in those where the drought was severe.



BAE 31394

FIGURE 73.—The production of milk is even more concentrated in the Dairy Belt than is the number of cows milked. About half of the urban population of the Nation, and a third of the total population live in this belt. In it about one-third of the Nation's milk is produced, half east of Lake Michigan and half west. A smaller milk-production belt includes the valleys of California, western Oregon, and Washington. Still lesser centers adjoin certain large cities—Washington, Cincinnati, St. Louis, Kansas City, and Denver—may be found on the map.

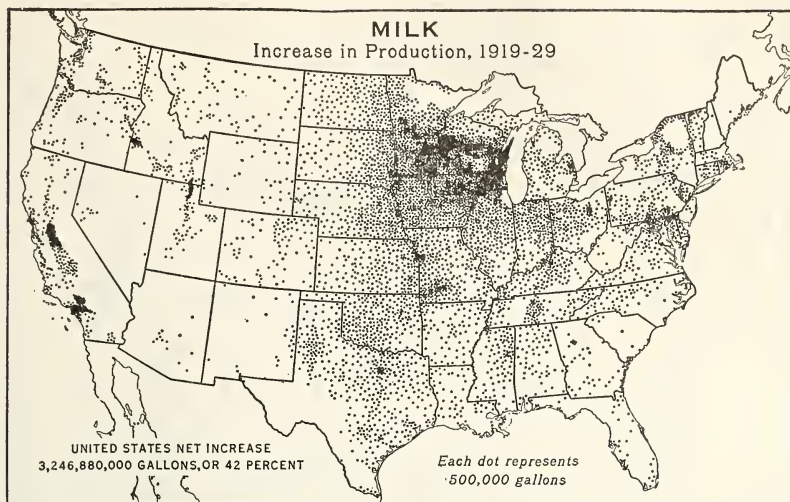


FIGURE 74.—The increase of milk production between 1919 and 1929 was almost universal, but the increase in the area lying west of Lake Michigan was much greater than elsewhere. For the six States, Wisconsin, Iowa, Nebraska, Minnesota, and the Dakotas, the production of milk, according to the census, averaged 63 percent greater in 1929 than in 1919, but the production of factory butter was 98 percent greater. The increase in milk production in the Nation as a whole, according to the census, was 42 percent. Some of this increase reported may be due to change in date of census enumeration.

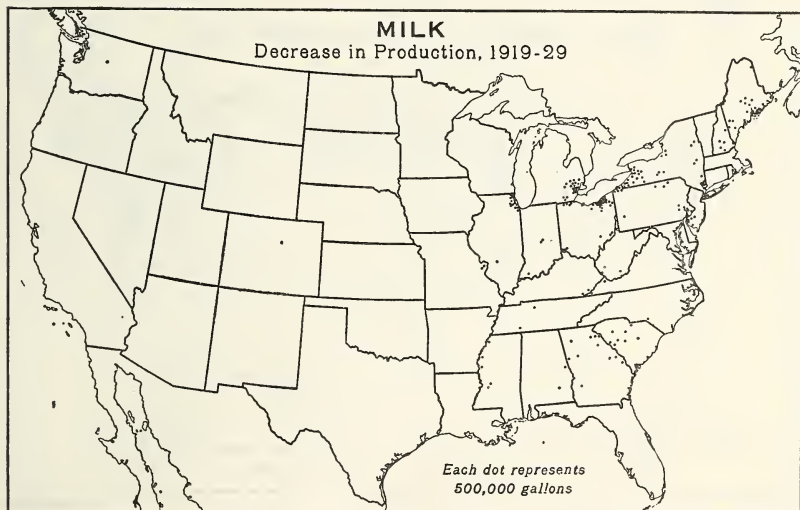
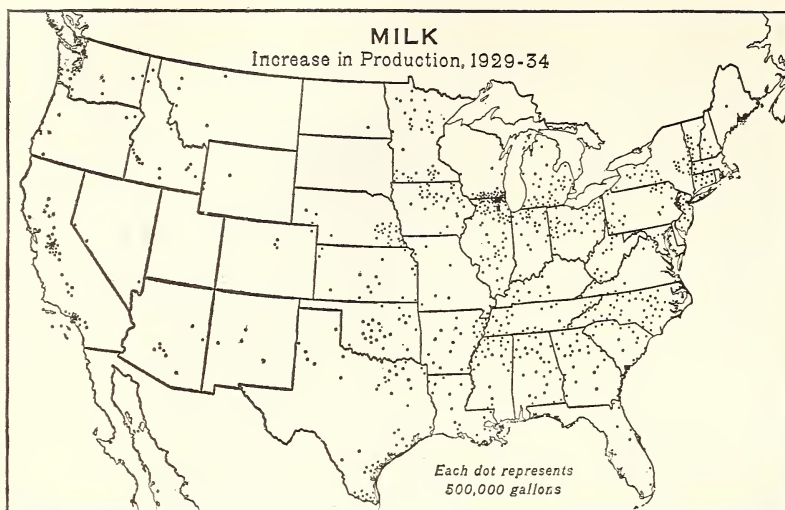
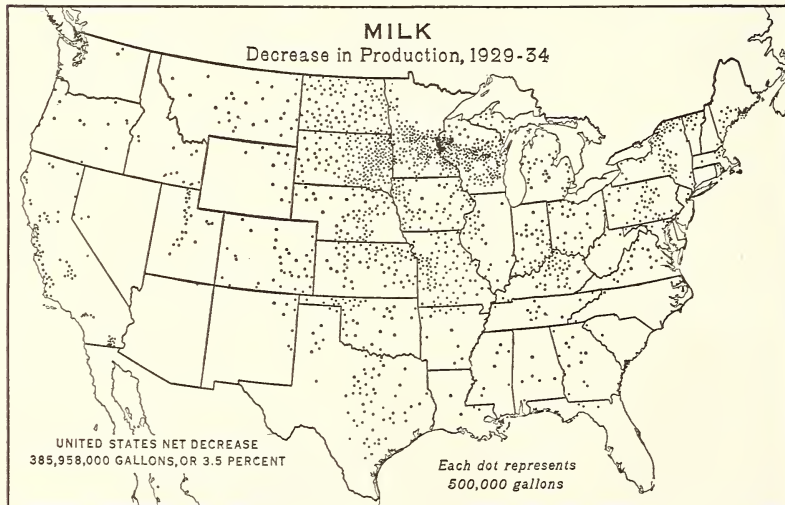


FIGURE 75.—The decrease in milk production between 1919 and 1929 was practically confined to a few counties in the Dairy Belt, notably around Chicago, Detroit, Cleveland, New York, and Philadelphia, where farms were being subdivided in suburban developments, and to Georgia and South Carolina, where the number of farms decreased about 90,000, largely because of boll weevil depredations and soil erosion. The widespread and generally great increase in milk production during this decade, indicated by the census returns, may be partly caused by change in date of enumeration from January 1, 1920, to April 1, 1930.



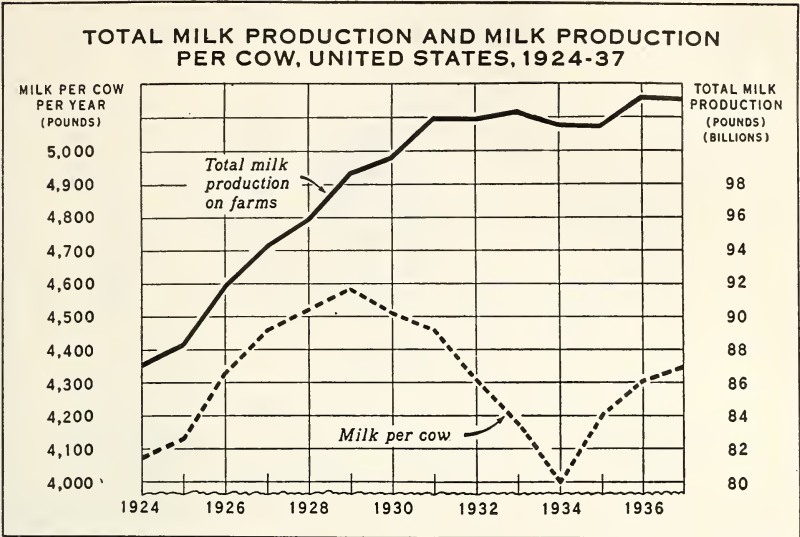
BAE 32021

FIGURE 76.—The increases in milk production during the depression years were scattered and small. The greatest increases were in the eastern and central Cotton Belt, in Ohio and Michigan, in the district west of Chicago, and in Los Angeles and Stanislaus Counties, Calif. The census was taken as of April 1, 1930, and the returns for that year may have been biased by the greater milk production in the spring. From 1925 to 1935, both census enumerations on January 1, the national production increased 16 percent



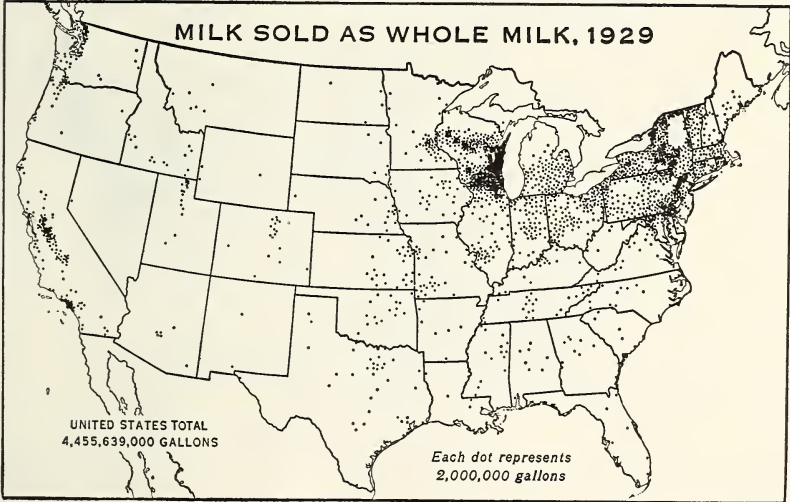
BAE 32022

FIGURE 77.—The census returns for 1934 indicated a net decrease of 3 percent in the milk production of the Nation as compared with 1929. The decrease was greatest in Wisconsin, Minnesota, Missouri, and the Great Plains States, a region which experienced in 1934 the most severe drought in our history. Decreases are indicated in parts of New England, New York, Pennsylvania, Kentucky, Utah, and California. This may be attributable in part to the change in date of census enumeration.



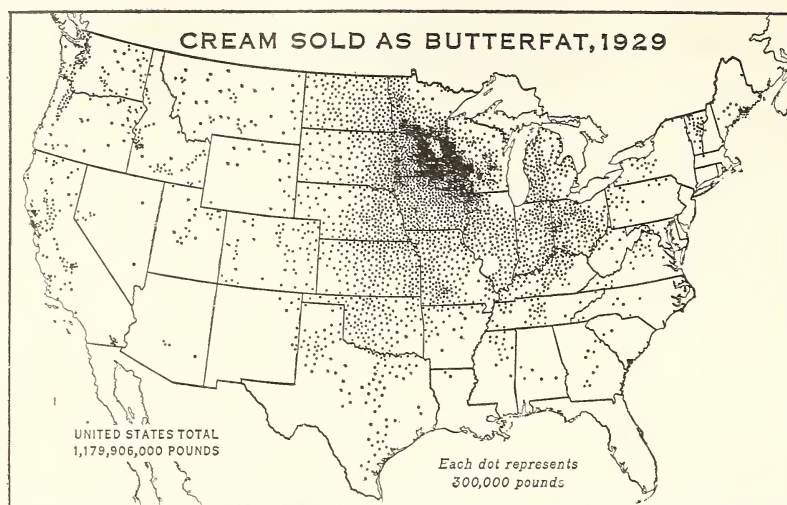
BAE 29188

FIGURE 78.—The production of milk in this country is estimated by the Bureau of Agricultural Economics to have increased from about 87,000,000,000 pounds in 1924 to 102,000,000,000 pounds in 1931, which is over 17 per cent. This is about double the percentage increase in the Nation's population. Production per cow increased, apparently, from nearly 4,100 pounds a year in 1924 to nearly 4,600 pounds in 1929, an increase of 12 per cent in 5 years. But as the depression developed and drought made grain relatively high in price, production per cow fell to about 4,000 pounds in 1934.



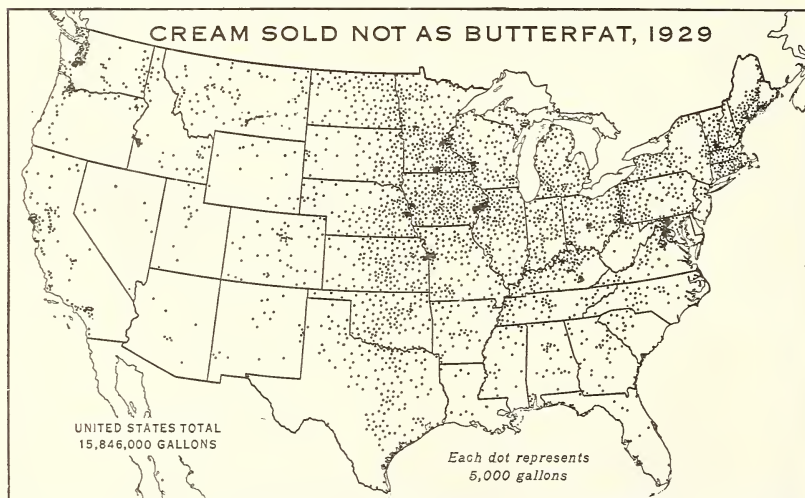
BAE 31461

FIGURE 79.—Milk is sold as whole milk mostly to people in the cities. The people of Chicago get most of their milk from Wisconsin, those of St. Louis mostly from Illinois. The New York City milk shed includes much of New York State and a part of western New England, also parts of New Jersey and Pennsylvania. Philadelphia draws mostly from adjacent portions of Pennsylvania; Baltimore and Washington mostly from Maryland. Half the urban population of the Nation is in the Dairy Belt, and consumption of whole milk per capita is larger than in the cities to the south.



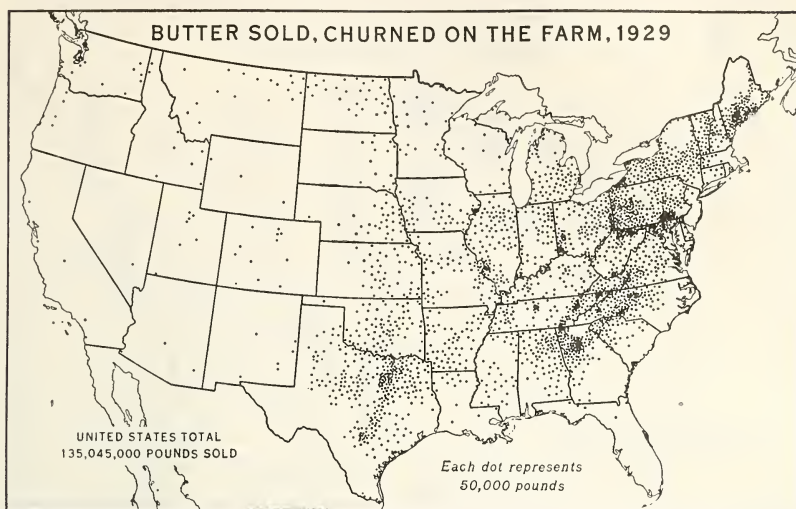
BAE 31462

FIGURE 80.—Minnesota and Iowa are now the great butter-producing States, and in extreme western Wisconsin the sale of cream as butterfat is equally heavy per square mile. Less dense is the production of cream for butter in the Corn Belt, except near the large cities, and in the Hard Winter and Spring Wheat Belts. Some factory butter is made in the limestone districts of the South and in many irrigated valleys of the West. About 35 percent of the milk produced in the Nation is used in making factory butter.



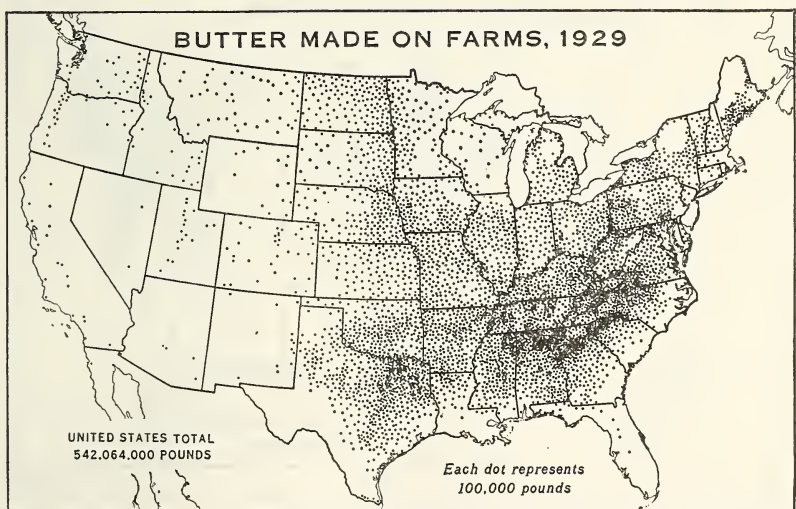
BAE 31463

FIGURE 81.—The sale of cream, but not as butterfat, is small but widespread. But, there are notable concentrations in a few counties, some located near large cities, and some not so located. The sale of cream not as butterfat is as large per square mile in New England and much of New York State as in most of the dairy area west of Lake Michigan. It will be noted that less than 16,000,000 gallons of cream were sold not as butterfat, as compared with 1,179,906,000 pounds of butterfat (fig. 80).



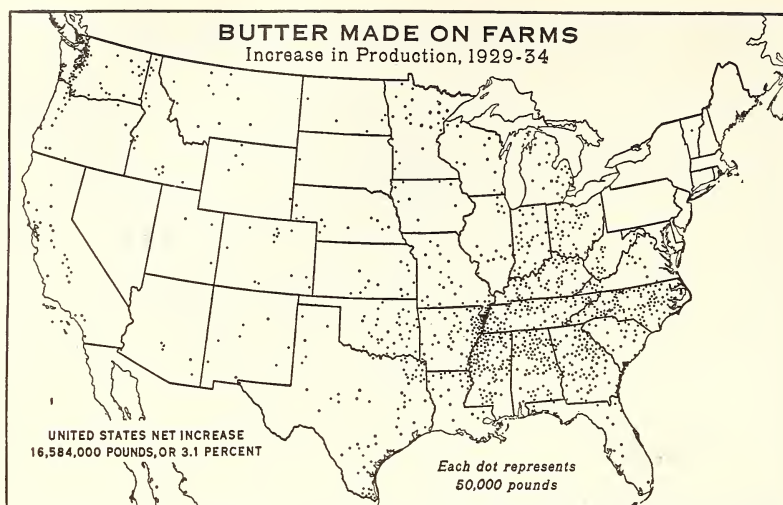
BAE 31464

FIGURE 82.—Butter is now churned on the farm and sold mostly in the Appalachian Mountain region, extending from Maine to Georgia and Alabama, in the adjoining Piedmont, and in the black prairie of Texas. A little farm butter is still produced and sold in much of the Cotton Belt, in the Corn and Winter Wheat Belt, notably near Cincinnati and St. Louis, in the Corn Belt, even in the Spring Wheat region, but practically none on the Atlantic Coastal Plain. Nine times as many pounds of butterfat as of butter were sold by farmers in 1929.



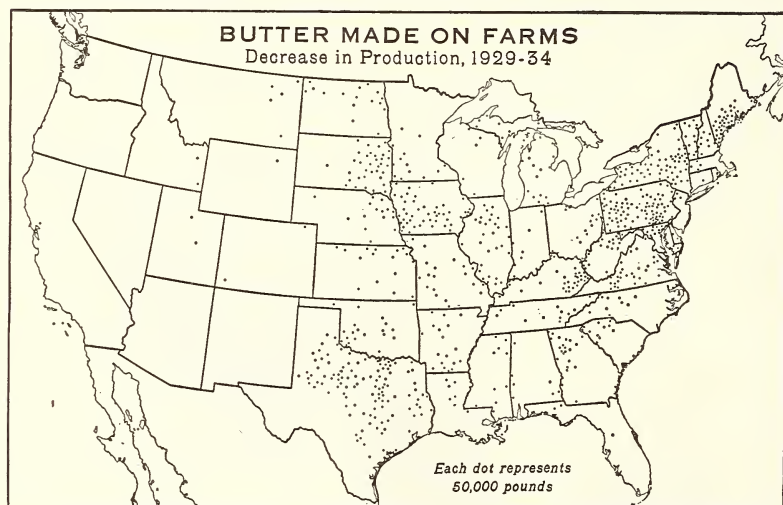
BAE 31465

FIGURE 83.—Butter is made on farms in considerable quantities in nearly all parts of the United States, except the deserts of the West, the lower Gulf and Atlantic Coastal Plain, and the highly commercial butter-factory area of Wisconsin and Minnesota. Production of farm butter is greatest in the southern Appalachians and the Piedmont, and in the less commercial parts of the Cotton Belt, especially in northeastern Texas. Self-sufficing and general farming favors the making of farm butter. Apparently one-fourth of the farm butter produced is sold (fig. 82).



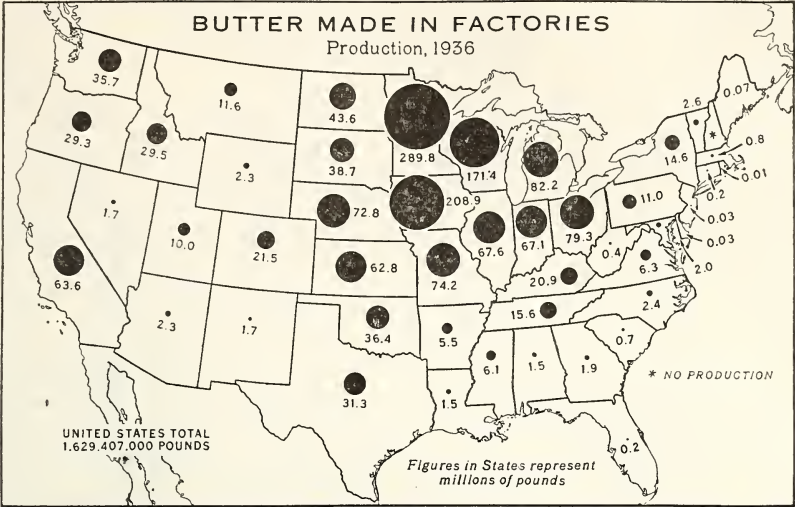
BAE 31777

FIGURE 84.—The quantity of butter made on farms in the United States increased slightly during the economic depression, but was only about half as large in 1934 as in 1899. The increases took place mostly in the South, in Indiana, and in Ohio, and, locally, in the Lakes States and the Pacific States. It is possible the drought prevented an increase in the central West, such as would have been expected during an economic depression.



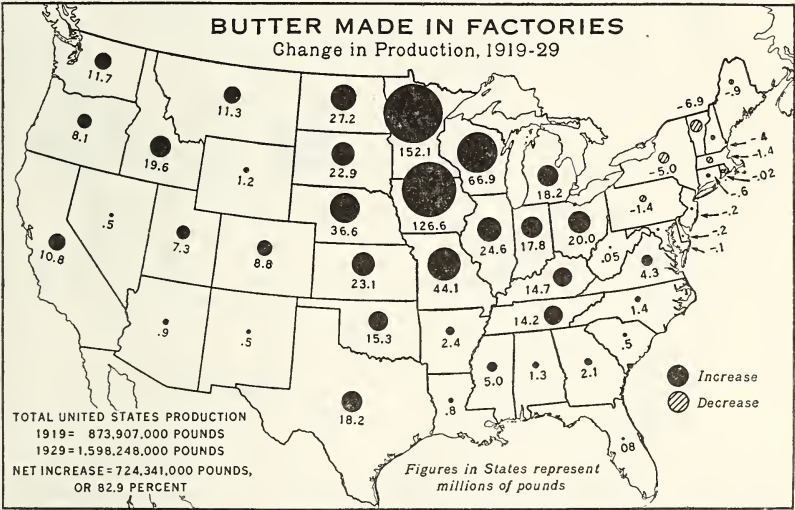
BAE 31778

FIGURE 85.—The decrease in production of farm butter in New England, New York, and Pennsylvania suggests a smaller surplus of milk during early summer than in predepression years. In these States butter is made on farms to utilize the milk not needed by the cities. The decrease in production of farm butter in Texas, Iowa, and the Dakotas is probably assignable to drought. The decrease in Kentucky and locally in the Piedmont, where the increase of farm population was large, may be owing to greater consumption of whole milk.



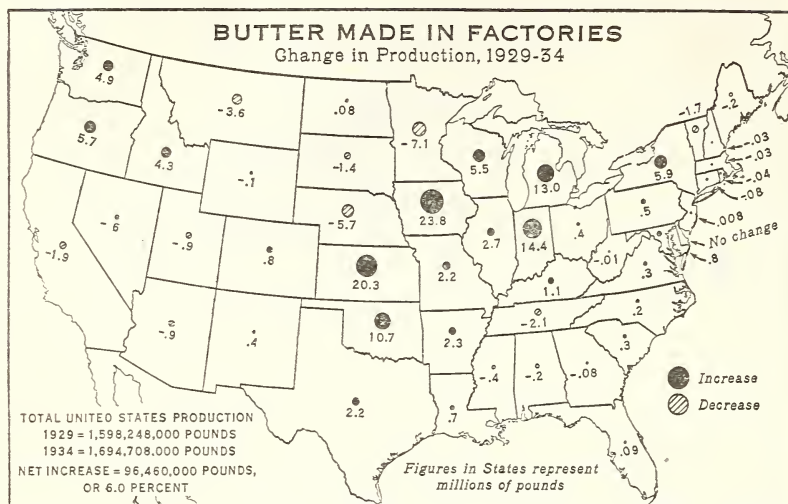
BAE 34247

FIGURE 86.—Two-fifths of the factory butter produced in the United States in 1936 was made in Minnesota, Iowa, and Wisconsin, and three-fourths in the triangle of States, the points of which are formed by Ohio, Kansas, and North Dakota. The Pacific Coast States produced over 8 percent of the national total. Very little factory butter is made in the Cotton Belt, the supply for the cities especially being imported from the North; and relatively little butter is made in the Northeastern States, because most of the milk is sold for city consumption.



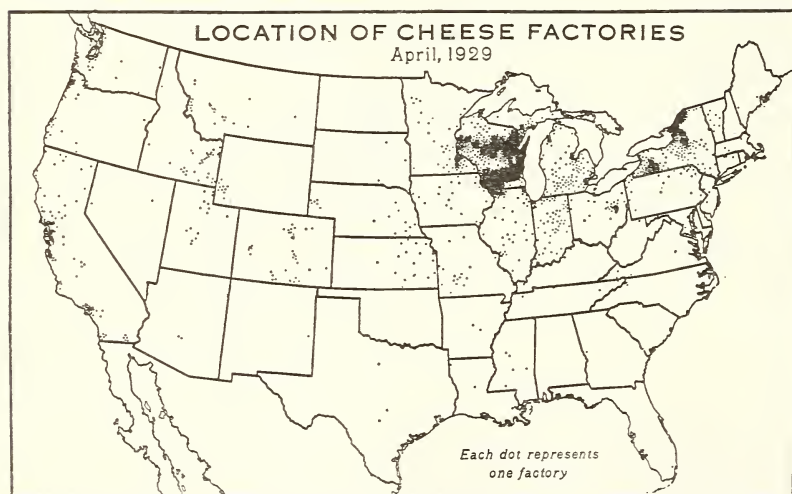
BAE 32075

FIGURE 87.—Butter made in factories increased 83 percent between 1919 and 1929, as compared with 16 percent in the Nation's population. Nearly half of this increase took place in Minnesota, Iowa, and Wisconsin, and 80 percent in the triangle—Ohio-Kansas-North Dakota. Though still small, production more than doubled in several Southern States. The increase in production was considerable in Texas and Oklahoma, the Rocky Mountain and Pacific States; but production decreased in all the States from Maryland to Maine.



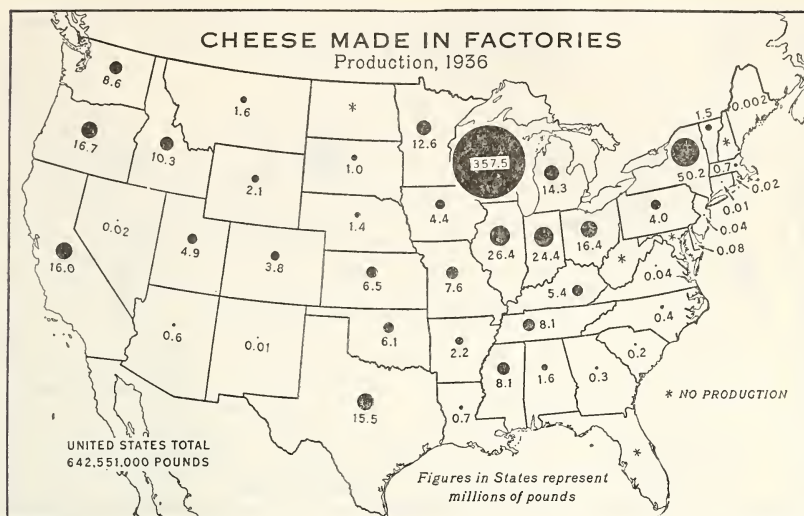
BAE 32076

FIGURE 88.—Between 1929 and 1934, depression years, the production of factory butter increased only 6 percent in the Nation as a whole, as compared with 4-percent increase in population. The increase in butter production occurred mostly in New York, Michigan, Indiana, Wisconsin, Iowa, Kansas, Oklahoma, and the Pacific Northwest. It is surprising that the severe drought in 1934 did not induce a decline in Iowa, Kansas, and Oklahoma, as well as in Nebraska, South Dakota, Minnesota, and Montana. In the other States the changes in production were small.



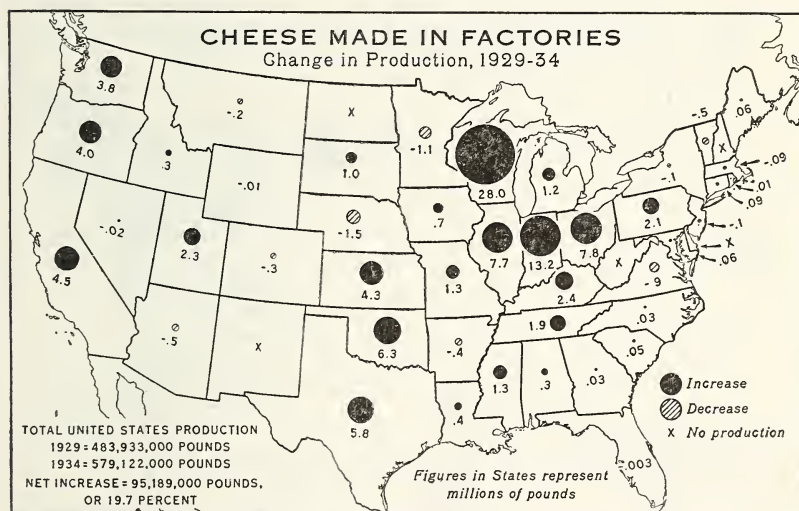
BAE 19594

FIGURE 89.—As Wisconsin produces about two-thirds of the cheese manufactured in this country, it is interesting to note where in Wisconsin the cheese is produced. In southwestern Wisconsin most of the foreign-type cheese is made, principally Swiss and Limburger. In eastern and north-central Wisconsin, and in Grant and Richland Counties in southwestern Wisconsin, practically the entire production is American cheese—a modified Cheddar type. The two centers of production in New York are the St. Lawrence Valley and southward to the Mohawk Valley and the southwestern area, located mostly in the hills.



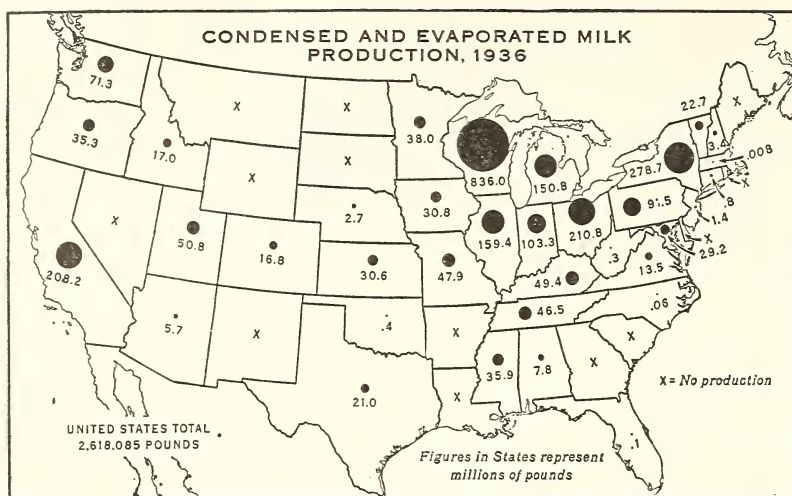
BAE 34248

FIGURE 90.—Nearly two-thirds of the cheese manufactured in this country in 1936 was made in Wisconsin and New York as compared with three-fourths in 1930. Much smaller quantities are produced in Michigan, Minnesota, the Corn Belt States, the Pacific States, Idaho, and Texas. Production has increased more than threefold in the Cotton Belt since 1930. This was made possible by modern cooling machinery. The total production provided about 5 pounds per person in the United States, as compared with 18 pounds per-capita consumption of butter. Practically no cheese is now made on farms.



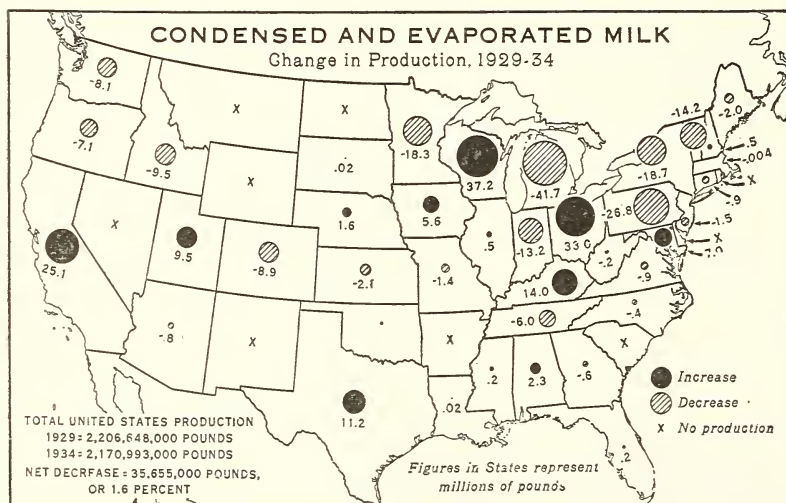
BAE 32077

FIGURE 91.—The increase in cheese production between 1929 and 1934 was nearly 20 percent, a larger percentage increase than that of butter. The increase in Wisconsin was large in quantity, but small in percentage. In Ohio production increased over 200 percent, in Indiana over 100 percent, in Texas nearly 200 percent, in Oklahoma manyfold. In Minnesota, Nebraska, and several other States a decrease was indicated. Only New Hampshire, West Virginia, New Mexico, and North Dakota reported no factory cheese made in 1934.



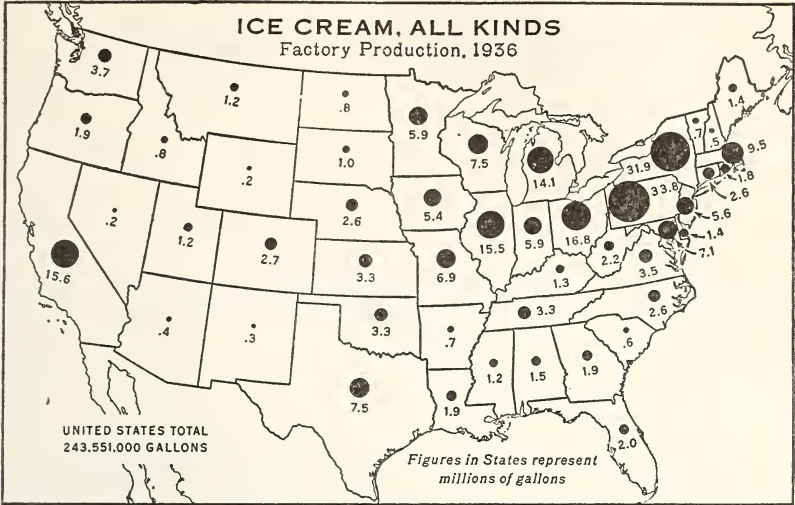
BAE 34249

FIGURE 92.—Wisconsin produced nearly one-third of the Nation's production of condensed and evaporated milk in 1936, New York 11 percent, Ohio and California each about 8 percent. The production of condensed and evaporated milk has persisted in the Northeastern States to a much greater extent than has butter production, and production in Minnesota and Iowa is as yet relatively unimportant. Very little factory butter, cheese, and condensed milk is made in Georgia and the Carolinas, and no condensed milk in the semiarid Great Plains. There is an appreciable production in Mississippi, despite the warmer climate.



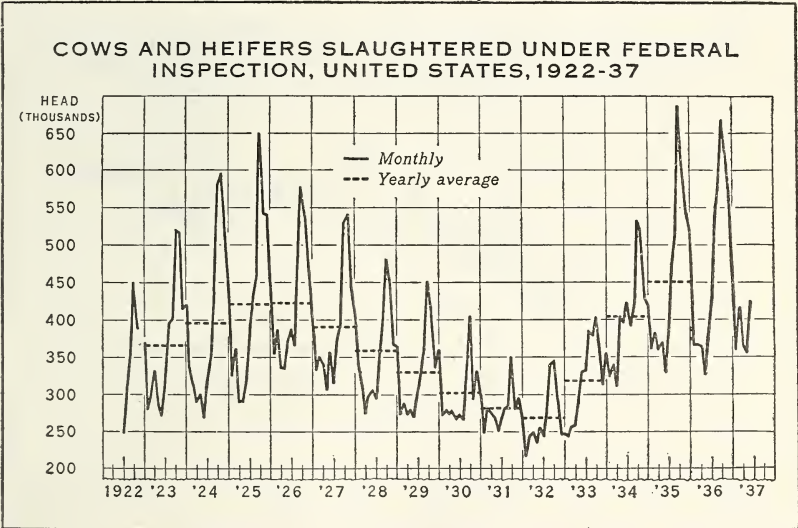
BAE 32078

FIGURE 93.—The production of condensed and evaporated milk decreased nearly 2 percent between 1929 and 1934 in the country as a whole. The decrease was notable in Vermont, New York, Pennsylvania, Michigan, Indiana, Minnesota, and the Pacific Northwest. Almost an equivalent increase occurred in Wisconsin, Ohio, Maryland, Kentucky, Iowa, Texas, Utah, and California. Production apparently ceased in Maine and Massachusetts, and dropped one-half in Vermont and Connecticut. The production of butter also decreased in these States, while production of milk increased, except in Maine. More milk apparently was sold whole.



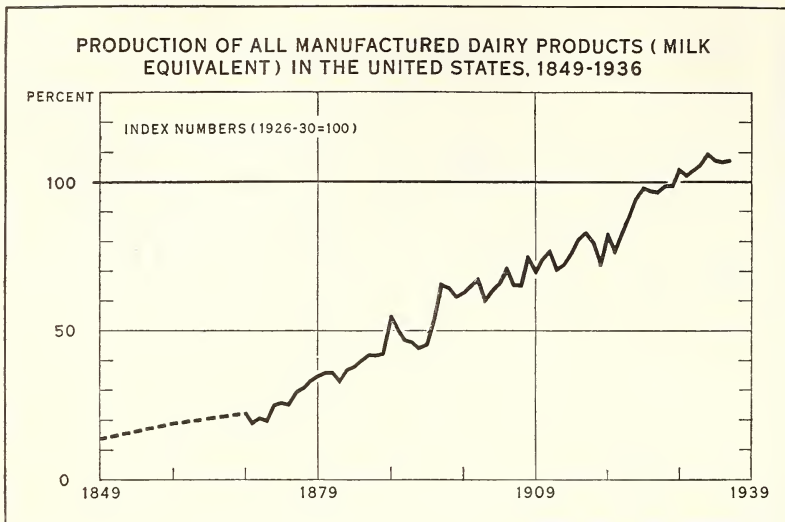
BAE 34250

FIGURE 94.—Most of the ice cream produced in factories is in the northeastern quadrant of the country, where most of the large cities are located. Pennsylvania leads in production, followed by New York, Ohio, California, Illinois, Michigan, and Massachusetts—much the same sequence as of urban population, except that New York should lead Pennsylvania, and Illinois should lead Ohio and California. But some ice cream is made in every State. Production per capita ranged in 1929 from 0.31 gallon in Arkansas to 3.67 gallons in Pennsylvania. The national average was 2 gallons. In 1936 it was 1.9 gallons.



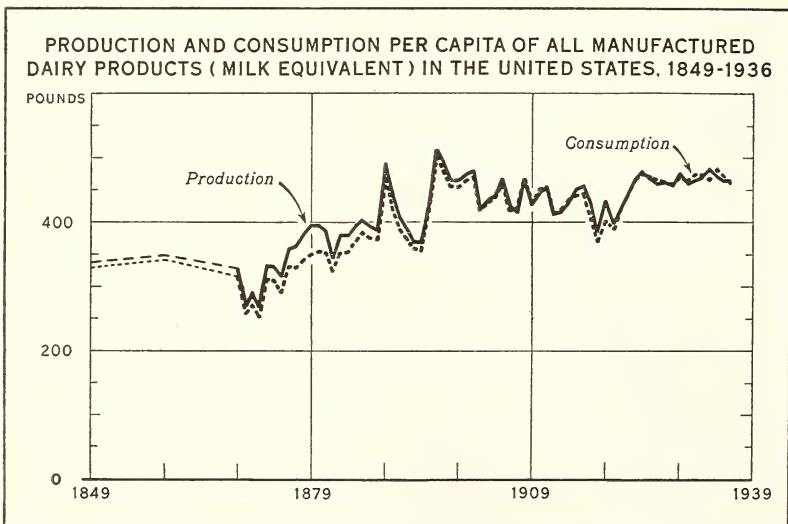
BAE 22180

FIGURE 95.—These estimates are based on returns from a large number of packers. In the spring a season of gain on cheap pasturage lies ahead in regard to cattle, whereas in the fall, the prospect is to feed expensive grain and hay, then the dry, fat cows are culled. The slaughter cycle with crests in 1925 and 1935 is also shown. Normally this cycle is 15 to 17 years in length, but the drought and depression forced the sale of an unusual number of cows and heifers in 1934, 1935, and 1936. Government purchases (8,000,000 in 1934, of which about 6,000,000, more than half cows and heifers, were slaughtered for meat), are excluded in this graph.



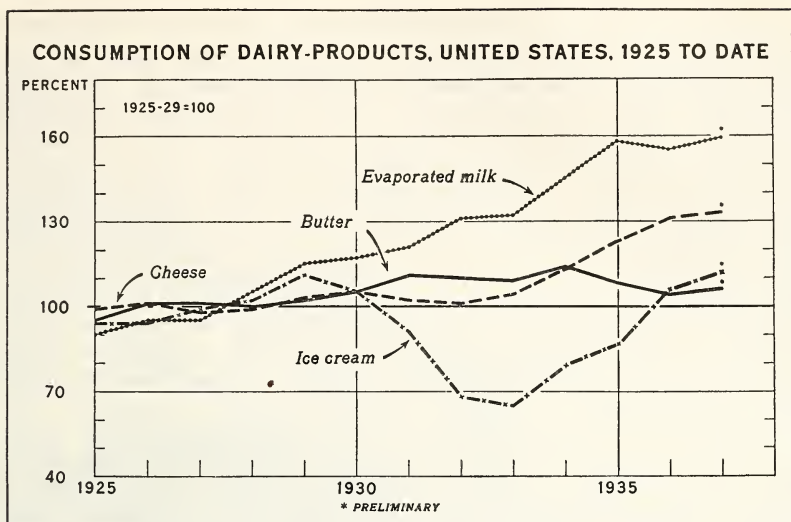
BAE 29231

FIGURE 96.—The production of manufactured dairy products, according to the estimates of the Bureau of Agricultural Economics increased more rapidly than population from 1870 to about 1896, then less rapidly until about 1920, then more rapidly until 1933. Drought and economic depression caused a decline in 1934. Production increased very rapidly between 1894 and 1896, a period of depressed economic conditions, and from 1920 to 1924, notably between 1921 and 1923, which were years of economic improvement. Similar estimates of total production of milk or of milk for consumption as such are not available.



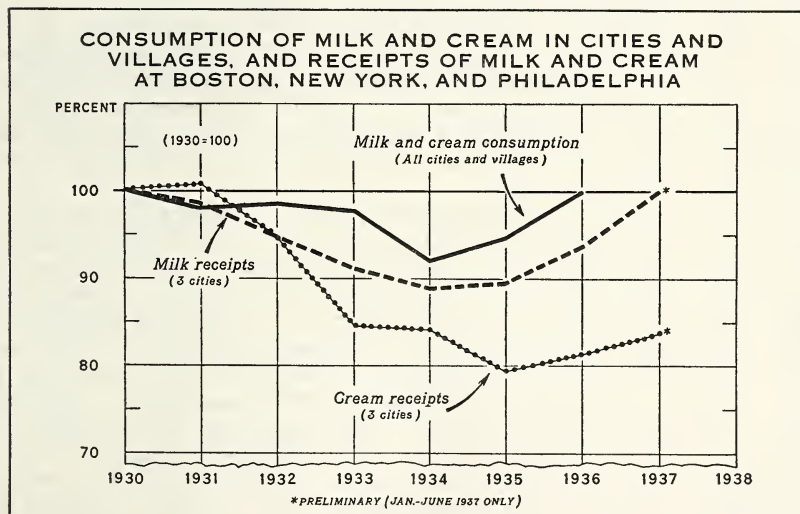
BAE 29293

FIGURE 97.—Aggregate production and consumption of manufactured dairy products keep close together in the United States because exports and imports have been small compared with production. Consumption per capita was about the same, apparently, in 1869 as in 1849 and 1859, then trended rapidly upward until 1889, and was still higher in 1896. After 1896 the trend was downward until about 1920, then rose until 1924, and has remained more or less stationary since. At present, consumption per capita is below the level at the beginning of the century, but considerably above the level prior to 1889.



BAE 29679

FIGURE 98.—Since 1925 the reports to the Bureau of the Census and to the Bureau of Agricultural Economics permit fairly accurate estimates of the production and consumption of manufactured dairy products. Total consumption of butter was about 10 percent higher during the depression than during 1925-29, but has since declined; that of cheese is now (1937) 30 percent higher. Consumption of ice cream declined during the depression, falling a third by 1933, but recovery is now complete. Consumption of evaporated milk, both total and per capita, increased greatly until 1935.



BAE 31764

FIGURE 99.—A Massachusetts census indicates that the population of Boston was practically the same in 1934 as in 1930, and it is doubtful whether the population of New York City and Philadelphia increased much during the economic depression. The average per-capita consumption of fluid milk in these cities apparently declined 10 percent during the depression. For "all cities and villages" the decline from 1930 to 1934 was about 8 percent. By 1936 consumption in "all cities and villages," was back to the 1930 level, but population had probably increased 5 or 6 percent.

SWINE

The number of swine on farms, January 1, 1935, 1936, 1937, and 1938, according to the estimates of the Department of Agriculture, was smaller than in any previous year since 1893, and averaged 20 percent less than during the 15 years, 1900-1914. But the number slaughtered during the 3 years 1935-37 averaged 2 percent less than during 1900-1914. Comparing successive peaks in the number of hogs on farms and successive troughs from 1900 to the drought of 1934, it appears that the increase in numbers was about 18 percent. But production of pork was nearly 33 percent greater during the cycle 1924-33 than during the cycle 1899-1908. Part of this greater increase in production of pork is attributable to heavier average weight at slaughter and part to an increase in the number of pigs raised per hog on farms January 1. Hogs are marketed at younger ages than formerly.

The number of people in the United States increased 48 percent between the central years of these swine cycles; nevertheless, the per-capita consumption of pork averaged almost as high during the 1924-33 cycle as during the 1899-1908 cycle, and was as high as the average of the entire period, 1899-1933. During the 10 years, 1899-1908, the average consumption per capita is estimated to have been 71 pounds, during 1909-18 the average was 66 pounds, during 1919-28 it was 68 pounds, and during the 9-year period 1929-37 it was 63 pounds. The per-capita consumption of lard has been even better maintained. Exports of pork declined from about 11 percent of production to 2 percent during the quarter century. The decrease in exports accounts in part for the maintenance of per-capita consumption of pork in this country.

There is probably a connection between this maintenance of the per-capita consumption of pork and lard and the advances that have been made in swine husbandry, particularly in sanitation, which has sent many a little pig to market that would otherwise have died of disease; and in use of minerals and legumes in feeding, which has resulted in economy in use of feed and in more rapid gains and slaughter at an earlier age.

The shift in diet from beef toward dairy products, as beef production failed to keep pace with the growth of population, and the increasing efficiency in the production of pork, have resulted in a material increase in output of human food per unit of feed used, with resulting economy in use of land. It requires, apparently, about four times as much crop land of equal productivity to produce 1,000 calories of dressed beef as of milk; and more pasturage is also required. Beef cattle, apparently, require about three times as much cropland as hogs to produce equivalent calories of meat, including fat. But as hogs derive nearly all of their sustenance from crops, particularly corn, and beef cattle derive a large proportion, probably more than half, from pasture, the tendency has been to increase the proportion of crops fed to hogs with little change in the acreage of pasture land available for beef cattle. In other words, the increase in crop feeds arising from the reduction in work stock has gone largely to swine and dairy cattle.

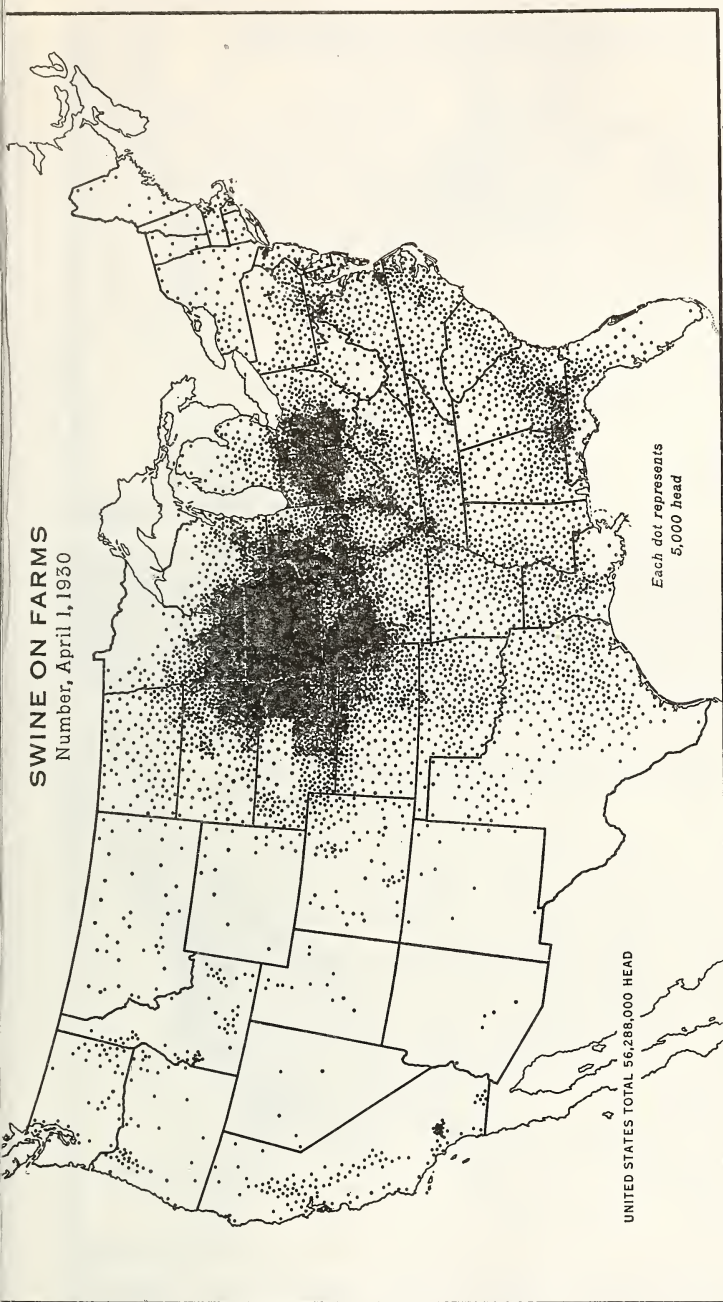
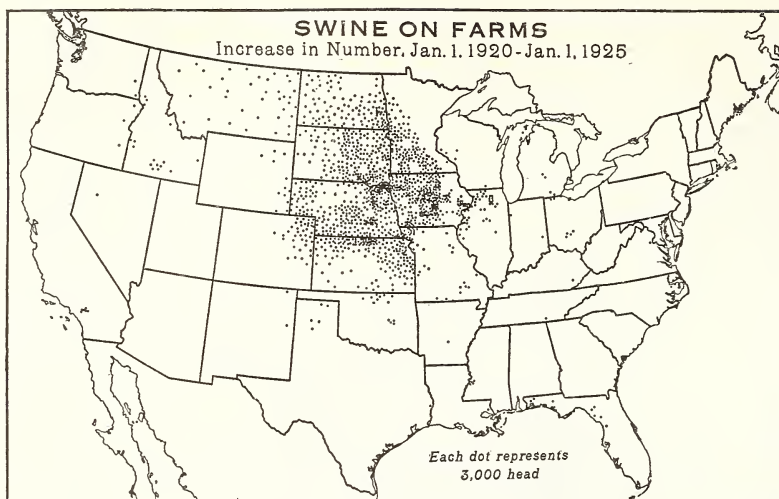
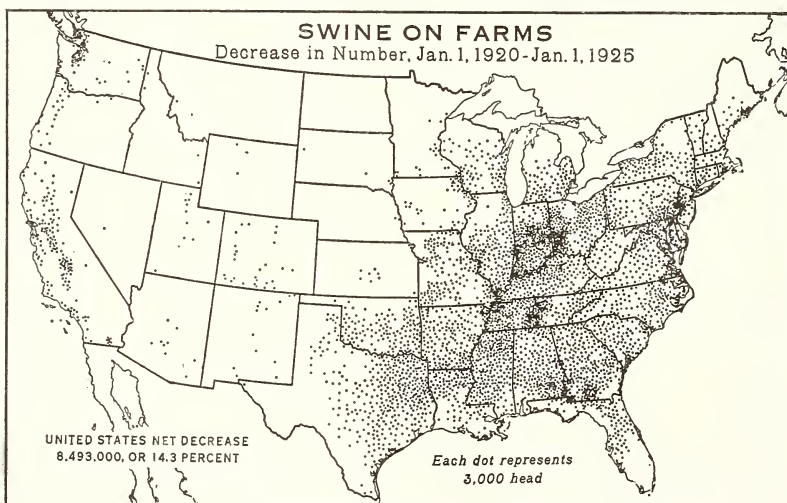


FIGURE 100.—Nearly 46 percent of the hogs and pigs in the United States are in the Corn Belt, 12 percent are in the Cotton Belt, and 13 percent in the Corn and Winter Wheat Belt. In 1930 there were, on the average, 80 swine per square mile in the Corn Belt, 13 in the Cotton Belt, 30 in the Corn and Winter Wheat Belt, 21 in the Dairy Belt, and about 6 per square mile in the remainder of the United States. As the cool Dairy Belt finds the best outlet for its crops and pastures in feeding dairy cows, so the warm fertile Corn Belt generally finds the growing of corn and feeding of beef cattle and hogs its most profitable system of farming.



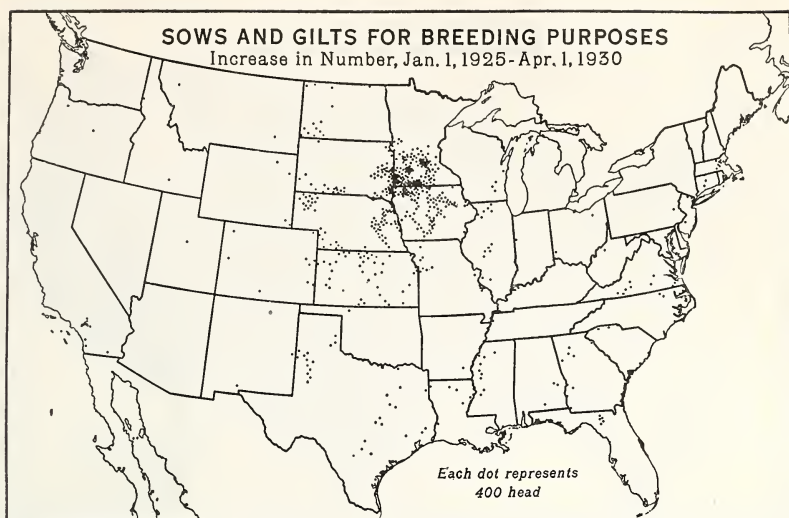
BAE 16664

FIGURE 101.—The increase in swine of all ages between 1920 and 1925 was almost limited to the western Corn Belt and the Spring Wheat Belt. This increase is associated with the recovery from the drought of 1919 in the Spring Wheat Belt, a sequence of seasons favorable to corn production in the western Corn Belt, and the increasing use of shorter season varieties of corn. The northwestward trend of the Nation's major area of hog production, which had been in progress since Cincinnati was the center, probably reached its "farthest west" during these years.



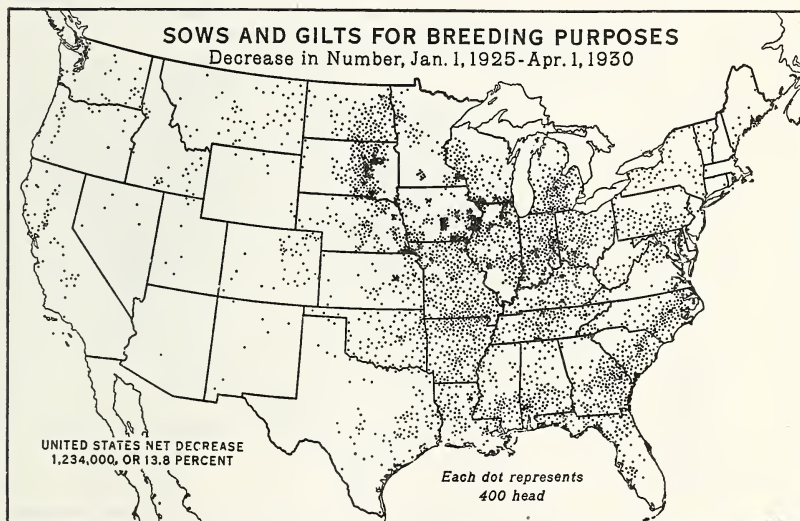
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FIGURE 102.—In most of the originally forested districts of the country the number of swine, like corn acreage, decreased between 1920 and 1925. In general, forest soils are less fertile than prairie soils, while the farms in forested regions are smaller and less well adapted to use of large-scale machinery. During these seasons, generally favorable to corn production in the western Corn Belt, the feed-deficit regions to the east found it difficult to compete in pork production. In the South when hogs are cheap and cotton is high the number of hogs usually decreases.



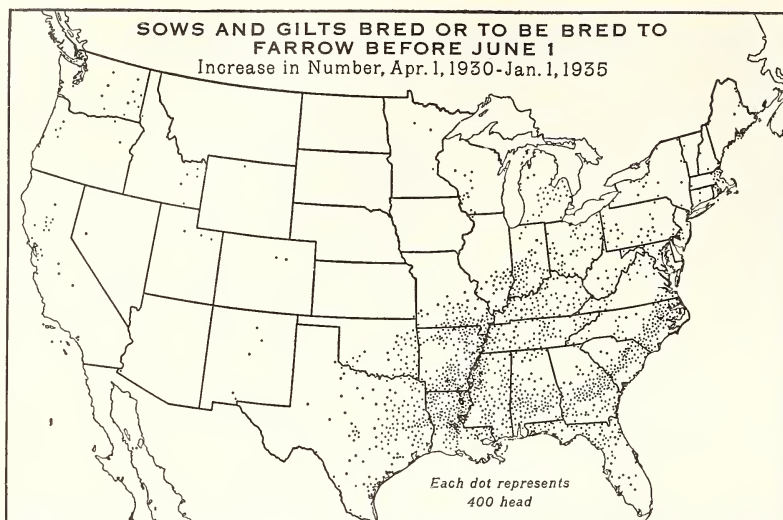
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FIGURE 103.—The change in date of the census enumeration to April 1 in 1930 makes it impossible to compare the total number of swine. Less error is involved in using the census figures of "sows and gilts for breeding purposes." The number of such animals should not be far different on April 1 than on January 1. Comparing these two sets of statistics, it appears that the increase in number of sows and gilts for breeding purposes between 1925 and 1930 occurred almost wholly in the western Corn Belt, notably southwestern Minnesota.



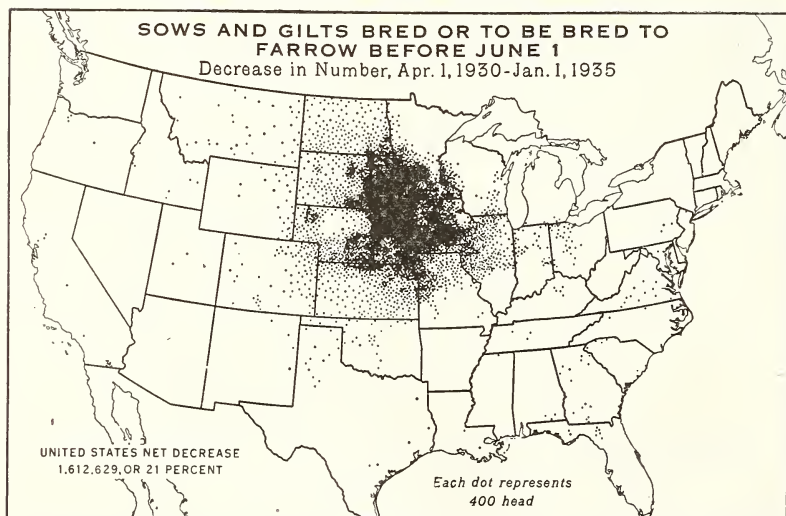
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FIGURE 104.—The decrease in sows and gilts for breeding purposes was more general between 1925 and 1930 than between 1930 and 1935. This area of decrease surrounded the area of increase in northern Iowa, southwestern Minnesota, and eastern South Dakota, and thence extended outward in decreasing intensity to nearly all parts of the United States, except a number of counties in the Great Plains region and in the South. The decrease proportionate to numbers was heavy in the South Atlantic and Gulf Coastal Plain and in the Corn and Winter Wheat Belt.



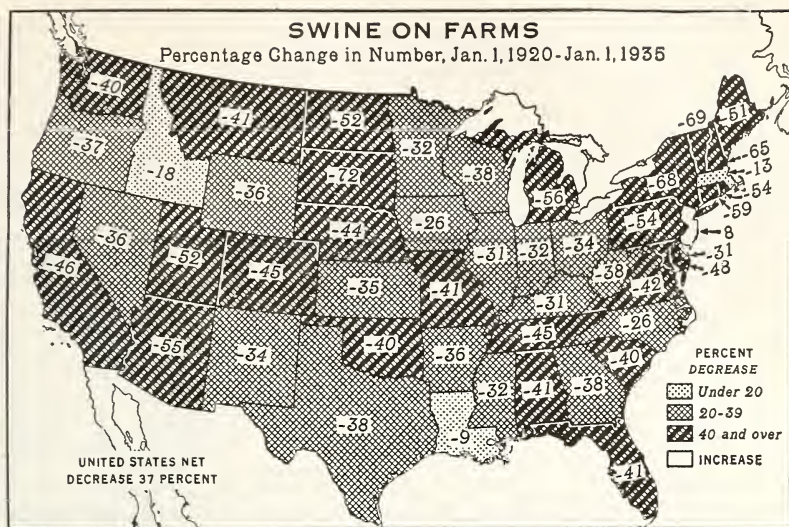
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FIGURE 105.—During the depression years 1930-34, the number of “sows and gilts bred or to be bred” to farrow before June 1 increased in number in most of the South, notably in the South Atlantic and Gulf Coastal Plain and the bottom lands of the Mississippi River. Cotton was low in price until 1934, and many farmers who wished meat had to raise it. The increase extended northward to the southern edge of the Corn Belt through Tennessee, Kentucky, southern Indiana, southern Illinois, and southern Missouri, areas containing many general and self-sufficing farms.



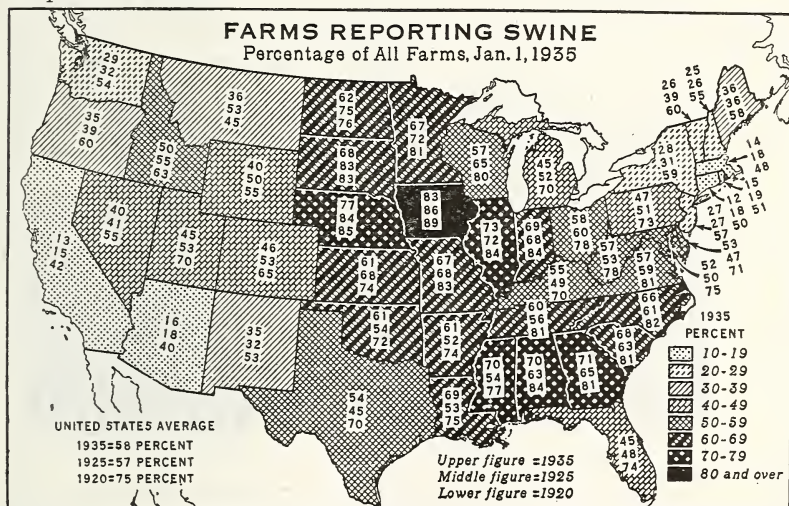
BAE 29668

FIGURE 106.—The decrease in swine in the greatest center of production, the western Corn Belt, was very heavy between 1930 and 1935, especially between 1933 and 1935. Most of this decrease was attributable to drought and to the agricultural adjustment program. The net decrease in the country during this 5-year period was 21 percent in breeding sows and gilts; in the preceding 5-year period it was 14 percent, and between 1920 and 1925 the decrease in all swine was 14 percent. The decrease in swine during the 15 years was 36 percent.



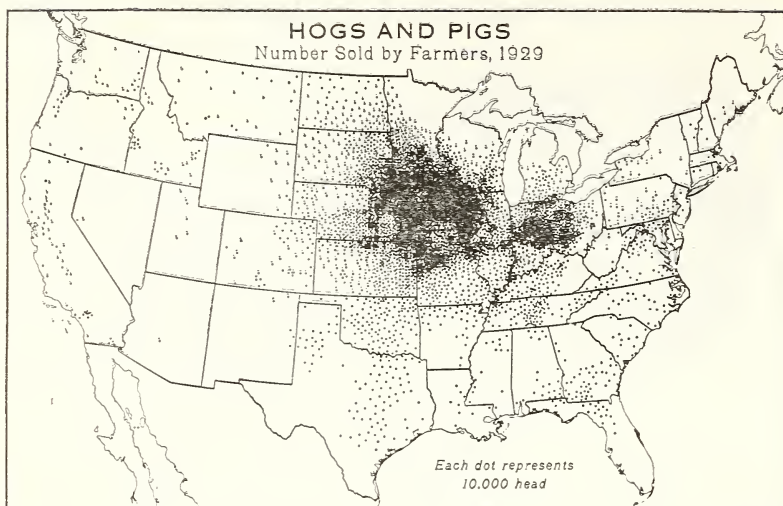
BAE 31440

FIGURE 107.—The decrease in swine between 1920 and 1935—mostly between 1933 and 1935—was almost universal. It was heavy in the drought region of the Central West, and equally heavy proportionately in much of the South, in several far Western States, and in the Northeastern States, except New Jersey and Massachusetts. There were fewer swine in 1935 than in any year during the twentieth century. Meanwhile the population of the Nation increased nearly 70 percent, and exports of pork practically disappeared. By January 1, 1938, the number of swine had increased nearly 14 percent over 1935.



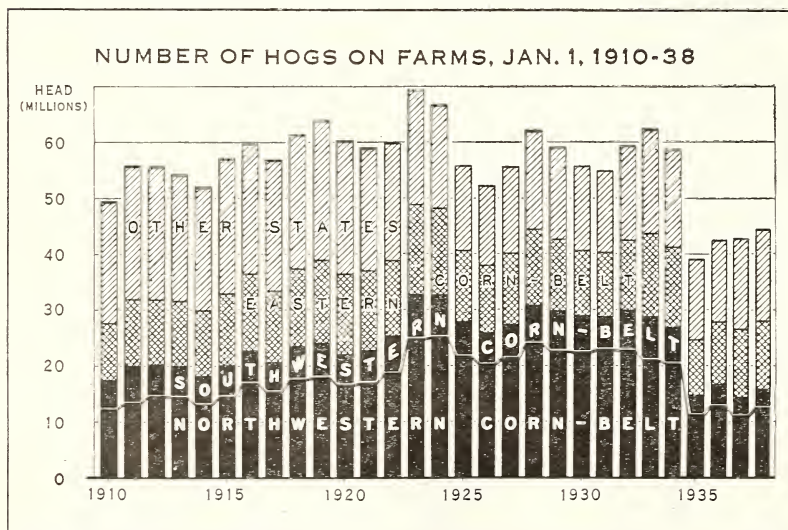
BAE 31444

FIGURE 108.—The proportion of farmers who raise hogs decreased in every State between 1920 and 1935. Most of this decrease occurred between 1920 and 1925; indeed, for the Nation as a whole there was a slight increase from 1925 to 1935. The decline from 1920 to 1935 was very sharp on the Atlantic and Pacific coasts. The increase from 1925 to 1935 was mostly in the South. Percentages for 1930 are omitted because the census was taken as of April 1. The percentage of farms in the Nation reporting swine was 75.6 in 1900 and 68.4 in 1910.



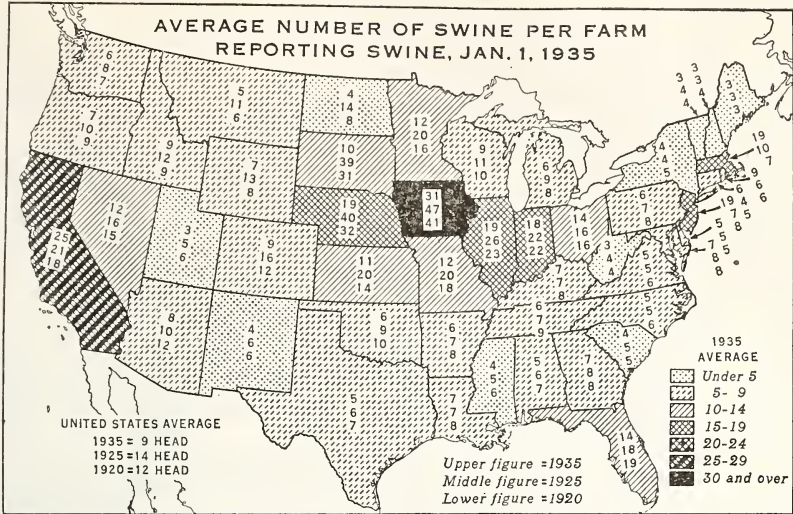
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FIGURE 109.—The commercial production of hogs is concentrated in the Corn Belt, with Iowa the center of the major area. The smaller number in central and eastern Illinois is owing to the sale of corn as grain at the Chicago and Peoria markets, which are nearby, and to which the freight rate is lower than from the western or eastern Corn Belt. The Corn and Winter Wheat Belt ranks next to the Corn Belt in sales of hogs, but far below. Relatively few hogs are sold in the Cotton Belt.



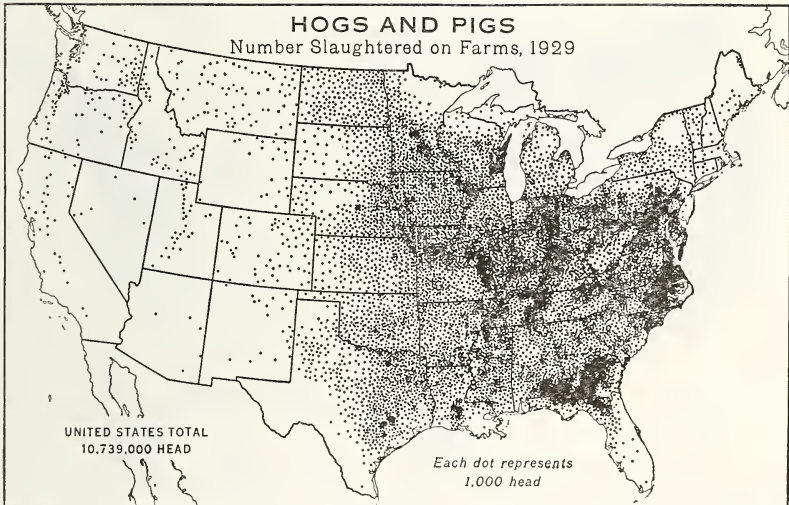
BAE 31285

FIGURE 110.—The Corn Belt included an increasing proportion of the Nation's swine from 1910 until about 1933. The agricultural adjustment program apparently affected the Corn Belt more than other sections; also the 1934 drought was severe in the western Corn Belt. In the bar graph above, the northwestern Corn Belt includes Iowa, Nebraska, Minnesota, and the Dakotas; the southwestern Corn Belt includes Missouri and Kansas; and the eastern Corn Belt includes Illinois, Indiana, Ohio, Michigan, and Wisconsin. This is a different classification from that used elsewhere in this publication.



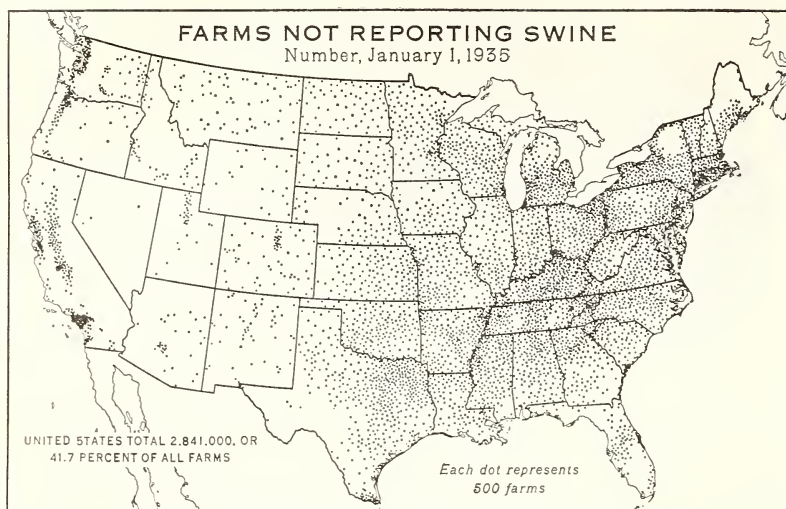
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FIGURE 111.—In 1920, 1925, and 1935 the census was taken as of January 1. Between 1925 and 1935 there was a notable decrease of swine per farm reporting in the central West, but this decrease occurred after 1933 and doubtless was ascribable to the drought and the adjustment program. In most Southern States and several Northeastern States there was a decrease between 1920 and 1925 as well. But in the Corn Belt and Spring Wheat States there was a notable increase between 1920 and 1925, and tendency toward concentration of production in this region.



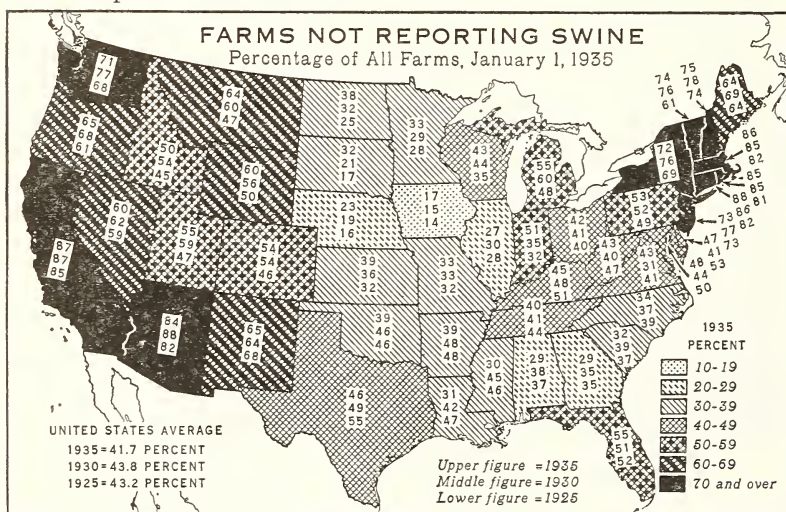
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FIGURE 112.—Only about one-fifth as many hogs, according to the census returns, were slaughtered on farms, mostly for home use, as were sold in 1929. This practice persists in practically all parts of the United States, but is most common in the less commercial areas, where general farming is common, notably in southeastern Pennsylvania, the southern Appalachians, the small-farm regions to the east and west, and in the originally forested portion of the Corn Belt. Few hogs are slaughtered on farms in New England, New York, New Jersey, and in the far West.



BAE 32578

FIGURE 113.—Farms not having hogs or pigs are most numerous in New England, New York, southeastern Pennsylvania, northeastern Ohio, California, and the North Pacific coast, where dairy, fruit, poultry, and part-time farms are characteristic; in Kentucky and Tennessee where small farms are numerous; and in the northern portions of the Cotton Belt, where most of the meat used is imported from the Corn Belt. There are few farms not reporting swine in the Corn Belt. Less than three-fifths of all farms in the Nation reported swine in 1935.



BAE 32513

FIGURE 114.—In southern New England, and in California and Arizona (States characterized by fruit, truck, dairy, and poultry farming), less than one-fourth of the farms reported swine on January 1, 1935; less than half of the farms in the nine remaining far Western States, Florida, and the States east and northeast of Ohio. Apparently, the proportion of farms having swine increased in the Cotton Belt, a deficit region, during the depression, but decreased in the Corn Belt and Spring Wheat Belt, surplus regions. Doubtless drought and the agricultural adjustment program were factors in these developments.

SHEEP AND GOATS

Sheep and goats are much less important in the agriculture of the United States than horses and mules, cattle, swine, or poultry. The approximate farm value of each of these groups of livestock on April 1, 1930, according to the census, and of their products during 1929, as estimated by the Bureau of Agricultural Economics, were as follows:

Value of livestock on farms April 1, 1930, and of livestock products during 1929

Class	Livestock. Apr. 1, 1930	Livestock products, 1929 ¹
	<i>Dollars</i>	<i>Dollars</i>
Horses and mules, including colts.....	1,348,647,000	
Cattle, including calves.....	3,303,988,000	3,434,000,000
Swine, including young stock.....	641,099,000	1,531,000,000
Sheep and goats, including young stock.....	433,180,000	270,000,000
Chickens ²	321,625,000	1,241,000,000

¹ Includes milk, wool, eggs, and animals and meat sold or consumed on farm—all estimates of the U. S. Department of Agriculture. Does not take into account change in inventory.

² Over 3 months old.

In the early days of the industry, sheep were kept primarily for their wool, as Angora goats are kept for mohair today; but production of lamb and mutton became increasingly important until during 1929 the value of the animals sold, or slaughtered on the farm, was about 60 percent larger than that of the wool sold. This is true of the range flocks of the West as well as the farm flocks of the East.

About two-thirds of the sheep and lambs in the United States are in the western half of the country, mostly grazed on the native vegetation of the range. Many graze in the national forests and other areas of humid or subhumid climate in the summer, then are driven down to the spring and fall range, and some are later driven onto the deserts for the winter. Others, particularly the lambs, are moved to the irrigated areas for feeding and fattening on alfalfa and grain. Still others are shipped east to the Corn Belt and adjacent areas for the same purpose. However, the eastern farmers raise more lambs than they buy from the West.

A century ago the sheep industry was very important in Vermont. It has now almost disappeared there, but it has persisted as a major enterprise since settlement in the hilly counties of east-central Ohio and southwestern Pennsylvania. It is still important in many other counties of Ohio, southern Michigan, the bluegrass district of Kentucky, central Tennessee, the limestone valleys of the Virginias, northern Missouri, and southern Iowa.

In the far West the sheep industry developed first in California and New Mexico, later spread into Oregon, Utah, Colorado, and, finally, into Montana and Wyoming. Now the greatest concentrations are found in the Edwards Plateau of Texas, the great valley of California, and in the irrigated valleys of the other Western States. Sheep are found in relatively large numbers in most counties in all of the Western States, especially in the more arid sections.

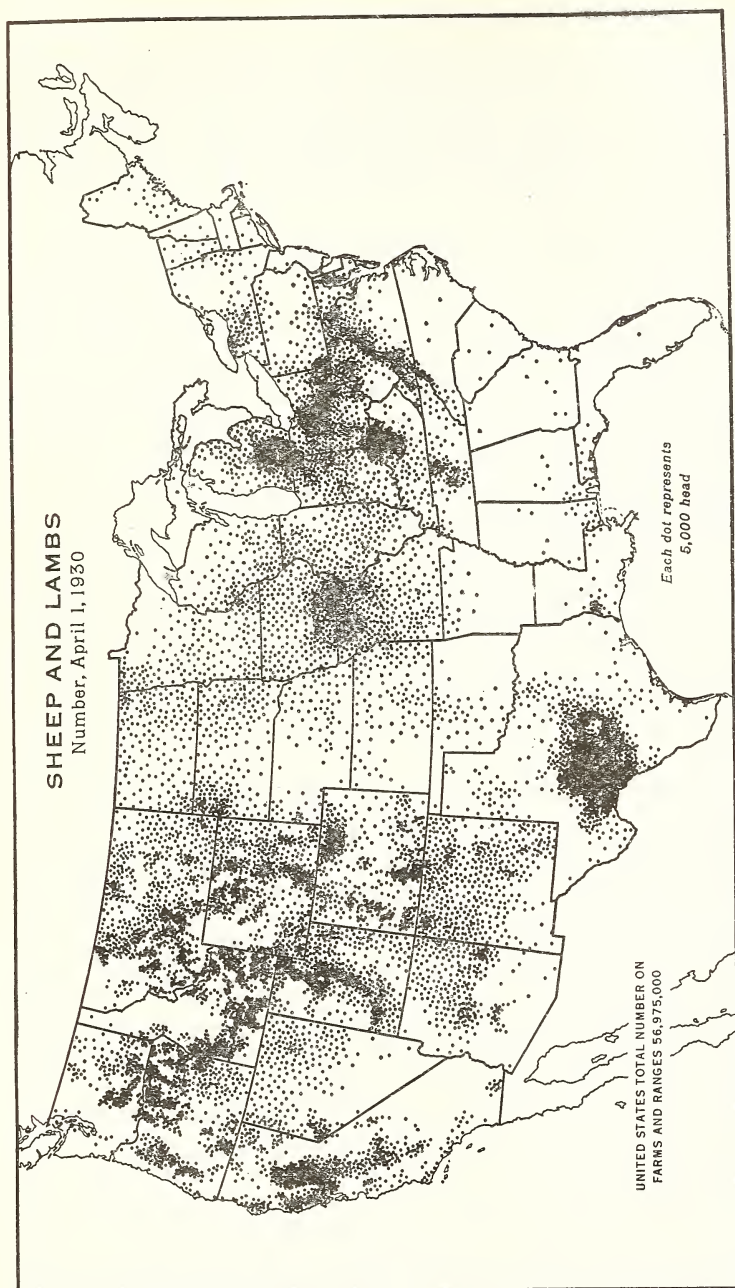
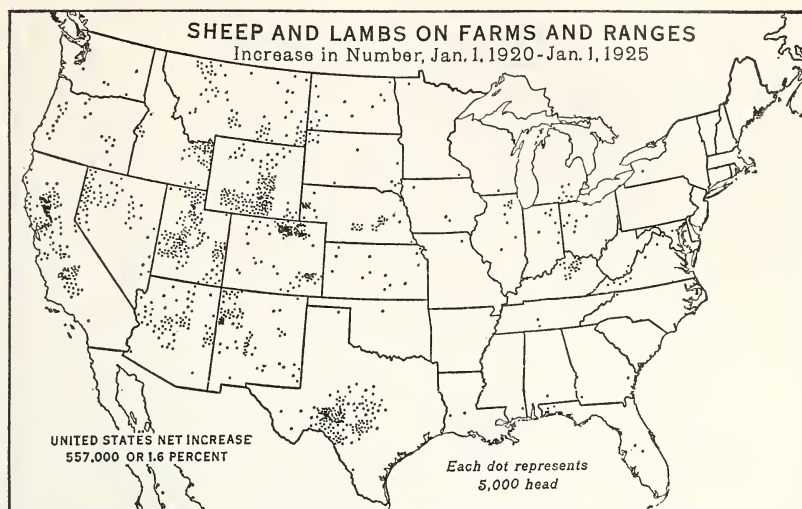
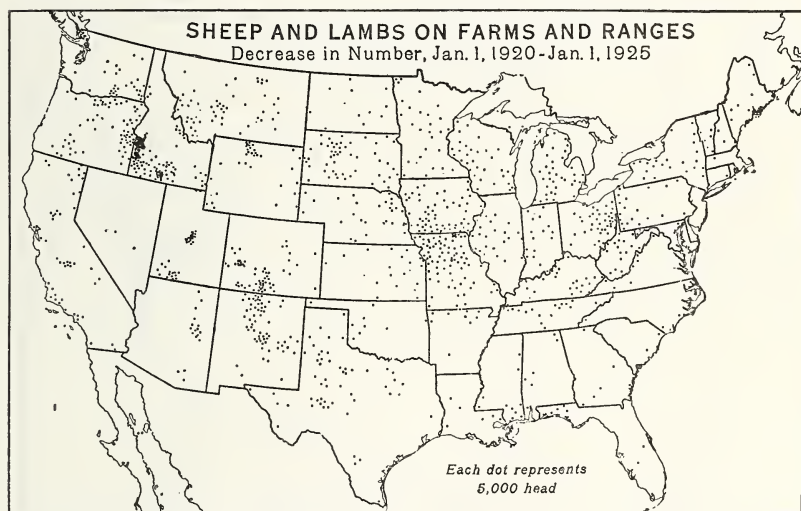


FIGURE 115.—Two-thirds of the sheep and lambs are in the western half of the United States, largely because sheep can graze on more arid lands than other domesticated animals and are less subject to disease in arid than in humid climates. Some dense spots in the West are owing in part to the date of enumeration, April 1, when many sheep were being fed in the irrigated districts, and in part of the enumeration of sheep in the county in which the owner resides, even though the sheep may graze in several counties at different periods of the year. The dense places in the East represent sheep on farms. The principal centers are in eastern and central Ohio, southern Michigan, and the bluegrass district of Kentucky, the valleys of the Virginias, and the midlands of northern Missouri and southern Iowa.



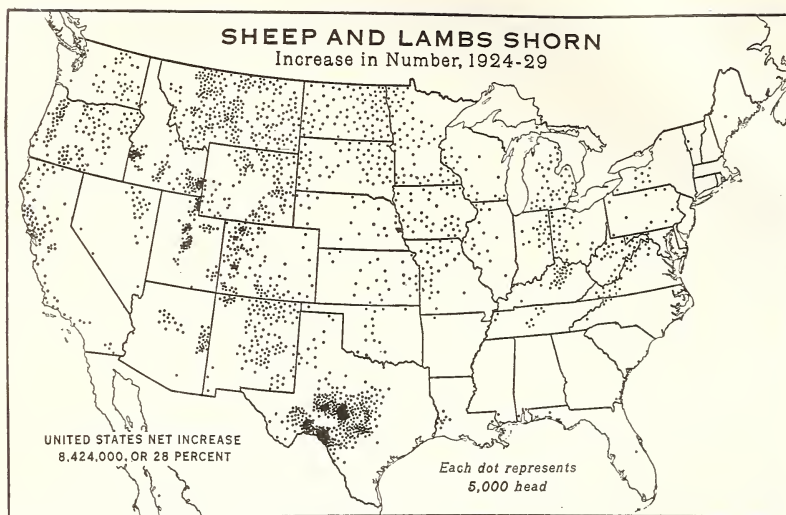
BAE 16792

FIGURE 116.—The increase in number of sheep and lambs between 1920 and 1925 was mostly in the West, notably in the lamb-feeding areas of the South and North Platte Valleys of Colorado and Nebraska, and the great valley of California. An increase is indicated also on most of the ranges of southern Wyoming, Utah, Nevada, Arizona, western New Mexico, and the Edwards Plateau of Texas. This increase was almost balanced by a decrease in the Eastern States, and in Idaho, Oregon, and Washington.



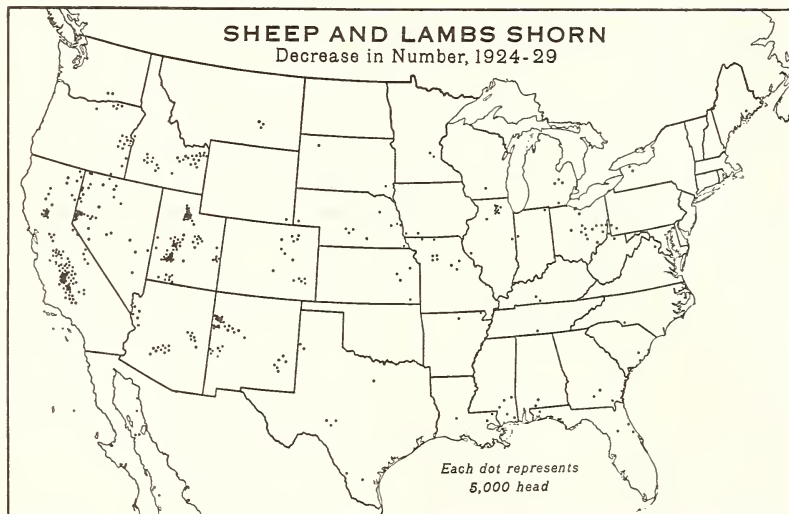
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FIGURE 117.—The decrease in number of sheep and lambs between 1920 and 1925 was scattered from Maine to Florida and California, but was greatest in the Corn Belt and the Lakes States, the feeding districts of the Snake River Valley of Idaho and eastern Oregon, and the mountain valleys of southern Colorado and New Mexico. During this 5-year period the East lost, in general, in number of sheep, and the West gained; but the changes were not great, except in a few feeding districts.



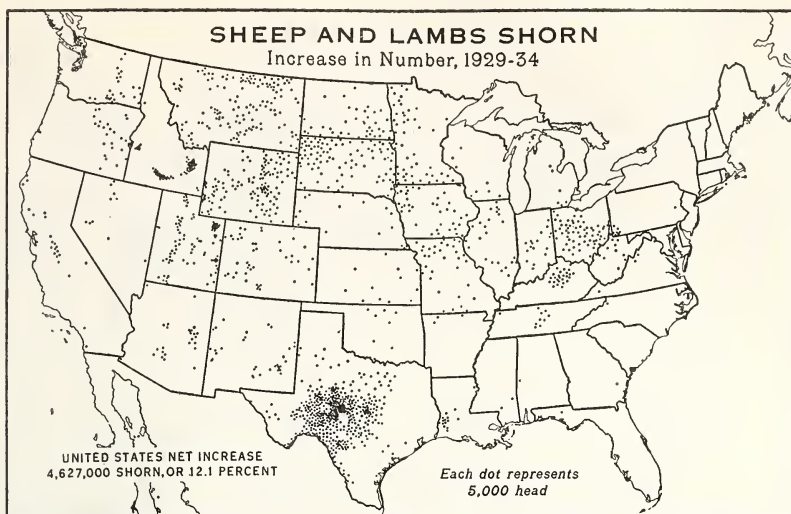
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FIGURE 118.—The census was taken April 1, 1930, and January 1, 1925, so sheep and lambs shorn, are used for comparative purposes. The Corn Belt and the Lakes States regained, between 1924 and 1929, much of their losses in sheep and lambs during the preceding 5-year period; but the increase was generally not in the same counties—note Ohio. The increase continued in the Edwards Plateau of Texas and in parts of Utah, and a recovery occurred in southern Idaho. The increase was notable also in the Dakotas, Montana, Wyoming, Colorado, and New Mexico.



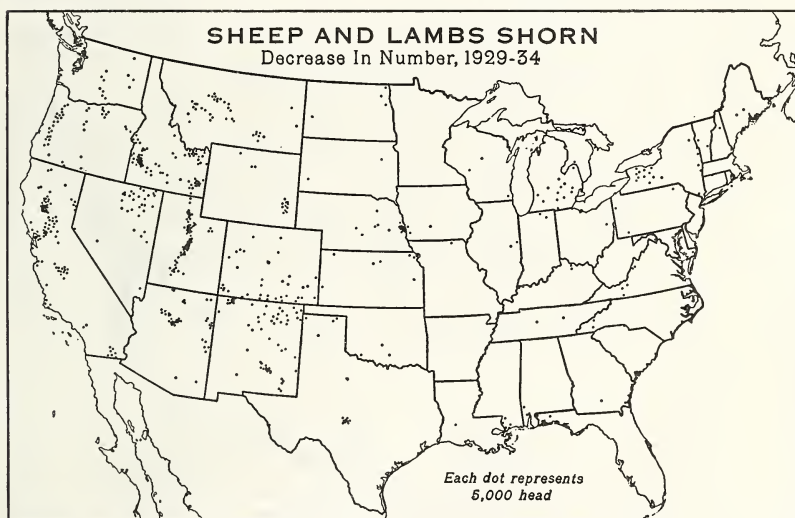
BAE 31449

FIGURE 119.—The decrease in number of sheep and lambs shorn between 1924 and 1929 occurred mostly in the arid intermountain region and in California. Small decreases took place in several lamb-feeding counties of the Corn Belt and in the breeding counties of southeastern Ohio. Outside these relatively few counties, the increase in number of sheep and lambs shorn was general, the net increase for the Nation exceeding 8,400,000. In Utah there is the suggestion of shifts of headquarters of large sheep outfits from one country to another.



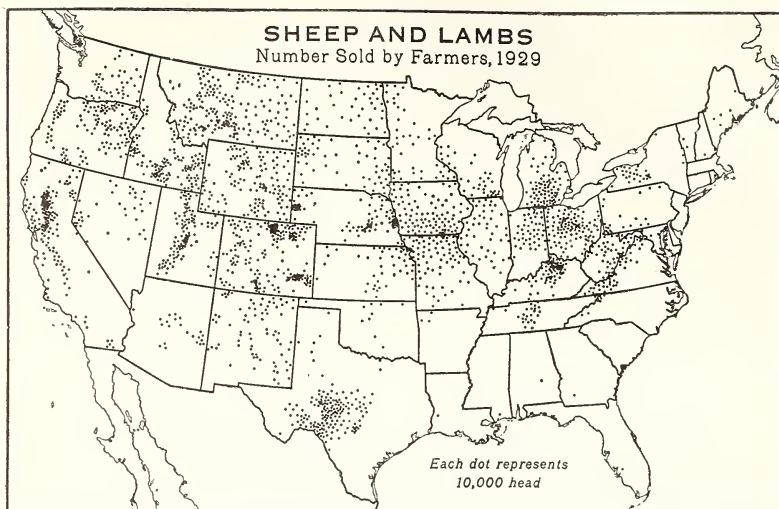
BAE 31827

FIGURE 120.—The number of sheep and lambs shorn continued to increase between 1929 and 1934 in the Corn Belt, the Spring Wheat Belt, and much of the Rocky Mountain region, and, notably, in the Edwards Plateau of Texas. Increases occurred in the bluegrass basins of Kentucky and Tennessee and in nearly all of Ohio. The net increase for the country at large was over 4,600,000, or 12 percent. Between 1919 and 1934, the number of sheep and lambs shorn in the United States increased 36 percent.



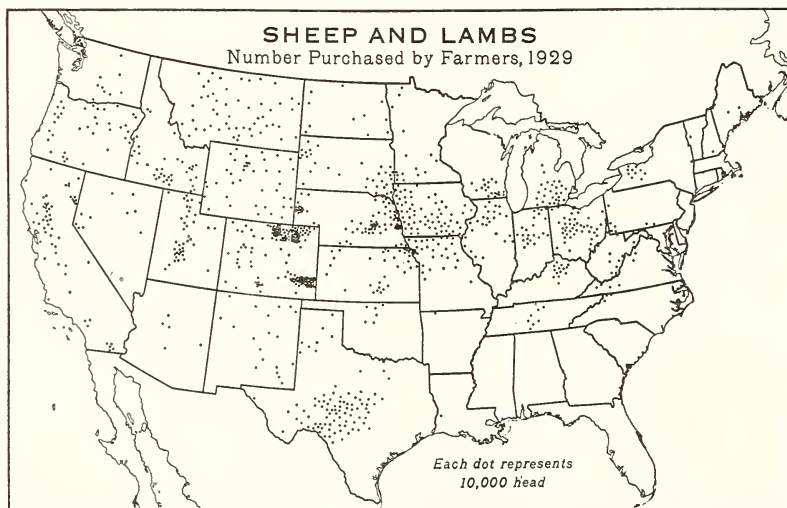
BAE 31828

FIGURE 121.—The decrease between 1929 and 1934 in number of sheep and lambs shorn was almost confined to the far Western States, Nebraska, Michigan, and New York. The decreases were greatest in certain counties of Utah and Idaho, and, as in preceding periods, were accompanied by increases in adjacent counties. The decreases west of the Rocky Mountains exceeded the increases, probably largely because of the severe drought in 1932 and 1934. Despite the drought, sheep apparently increased in nearly all the Great Plains region, except the Dust Bowl.



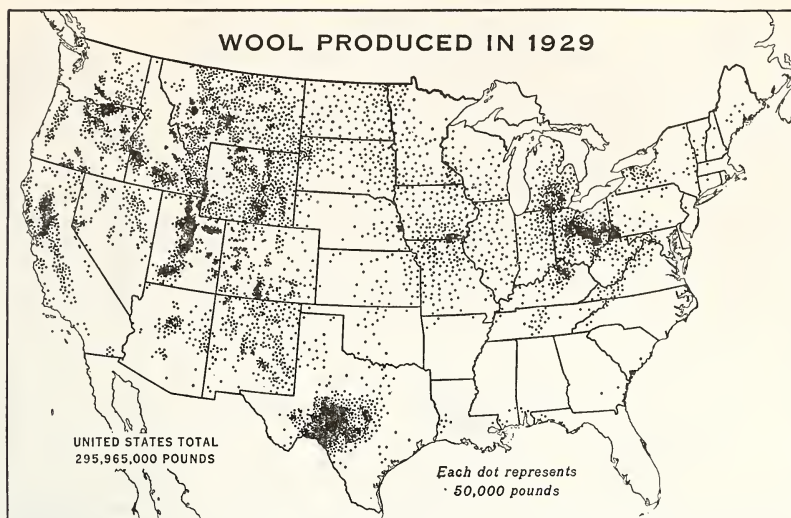
BAE 31468

FIGURE 122.—Lambs are now a much more important product in the sheep industry than is wool, based on value. About two-thirds of the lambs produced are raised in the western sheep States. Many of these are shipped to the irrigated districts or to the Corn Belt and adjacent areas for further growth and fattening. These feeding districts stand out darkest on the map. The number of sheep and lambs reported as sold in 1929 was less than half the number reported on farms April 1, 1930, which suggests less complete reports on sales.



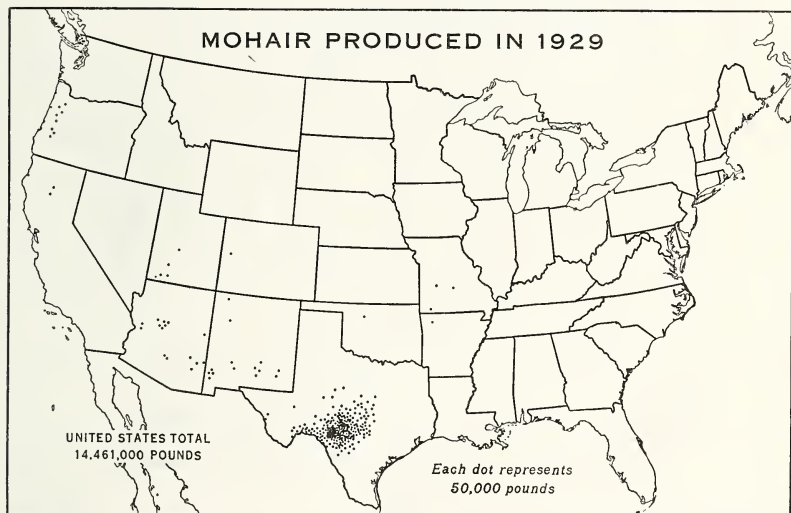
BAE 31469

FIGURE 123.—Sheep and lambs bought by farmers in 1929 were apparently less than half as numerous as those sold. Farmers reporting purchases were located mostly in the irrigated feeding areas of the West, notably the South Platte and Arkansas Valleys in Colorado, and in the Corn Belt. Evidently in the Edwards Plateau of Texas, and probably elsewhere in the West, large numbers of sheep and lambs were sold by one farmer to another. In the Corn Belt, the sales generally greatly exceeded the purchases.



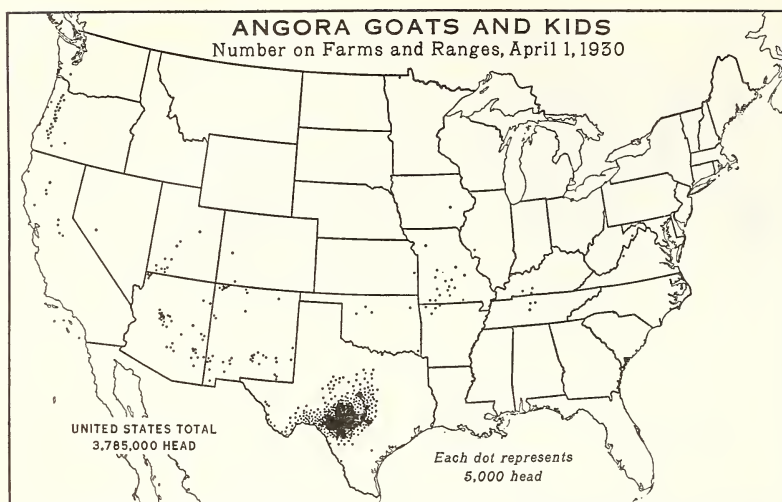
BAE 31550

FIGURE 124.—Comparison of this map of wool production with the map of number of sheep and lambs the following April indicates a low production of wool per animal in the limestone basins and valleys of Kentucky, Tennessee, and the Virginias, also in Arkansas and Arizona. The estimates of the Department of Agriculture on weight of fleece vary from 3 to 5 pounds in most of the Cotton Belt States, to between 6 and 8 pounds generally in the North and about 9 pounds in Montana, Wyoming, Utah, Idaho, Oregon, and Washington.



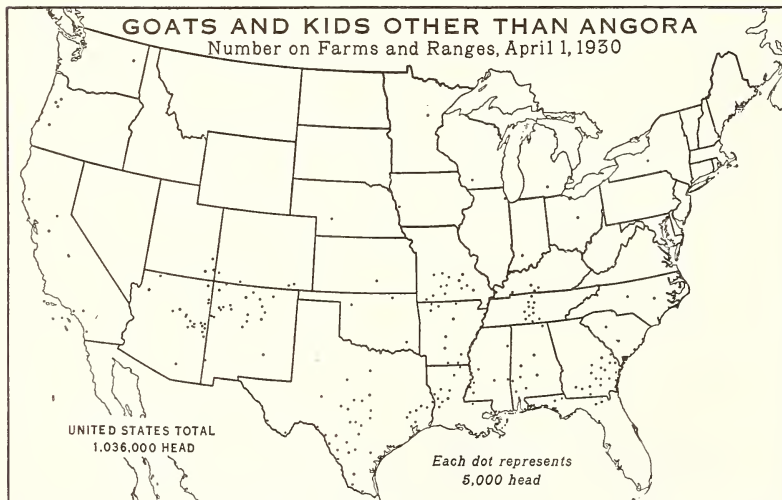
BAE 31549

FIGURE 125.—The major Angora goat industry in the United States and, consequently, the production of mohair, is located on the Edwards Plateau of Texas. Some mohair is produced in southern New Mexico and Arizona, and under the very different climatic conditions of western Oregon, where the goats are used to clear brush after cutting of the forest. Production of mohair in the United States doubled between 1920 and 1930. Imports dwindled accordingly and almost disappeared.



BAE 31482

FIGURE 126.—Over half the goats in the United States are in Texas. Most of those in Texas are on the Edwards Plateau, and are nearly all Angoras. Cattle, sheep, and goats are grazed on the same land in this district, the cattle pasturing on the grass, the goats browsing the oak scrub and other brush, retarding its advance upon the grassland, and the sheep eating weeds as well as the grass and brush. In Oregon most of the goats are Angoras. In New Mexico and Arizona, short-haired goats are numerous, but Angoras predominate.



BAE 31483

FIGURE 127.—Goats and kids other than Angoras are mostly short-haired goats raised primarily for meat. The short-haired goats are found scattered across the southern United States from North Carolina to California, with some as far north as New York and the Lakes States. The largest numbers are located in southeastern Georgia, central Tennessee, southern Missouri, central Texas, and among the Spanish American and Indian people of northern New Mexico and northeastern Arizona. In 1930 there were nearly 4,000,000 Angora goats and kids in the United States, but only 1,000,000 other breeds.

POULTRY

Measured in value of products the poultry industry usually ranks next to the dairy industry in importance among the animal industries. It is more widespread than any other agricultural enterprise. Chickens were reported on 5,372,597 farms on April 1, 1930, which is 85.4 percent of all farms. In addition, chickens are kept in many backyards in villages and even in some cities.

Although poultry are kept on most farms, and nearly all farms that keep poultry sell eggs and live or dressed birds, the number of farms that specialize in poultry is small. The Agricultural census of 1930 reported 166,517 "poultry farms," that is, farms that received over 40 percent of their income from the sale of poultry and eggs. These specialized farmers are in competition to a greater or less extent with the farm flocks—with farmers who do not specialize in poultry (indeed, in many cases whose wives operate the poultry enterprise). Farm flocks pick up a considerable part of their feed and labor does not need to be hired, so the cost of production is low. Were it not for the larger egg production in winter, the superior facilities for marketing eggs promptly while fresh, and for marketing the live birds, many specialized poultry plants would find it difficult to compete with these farm flocks.

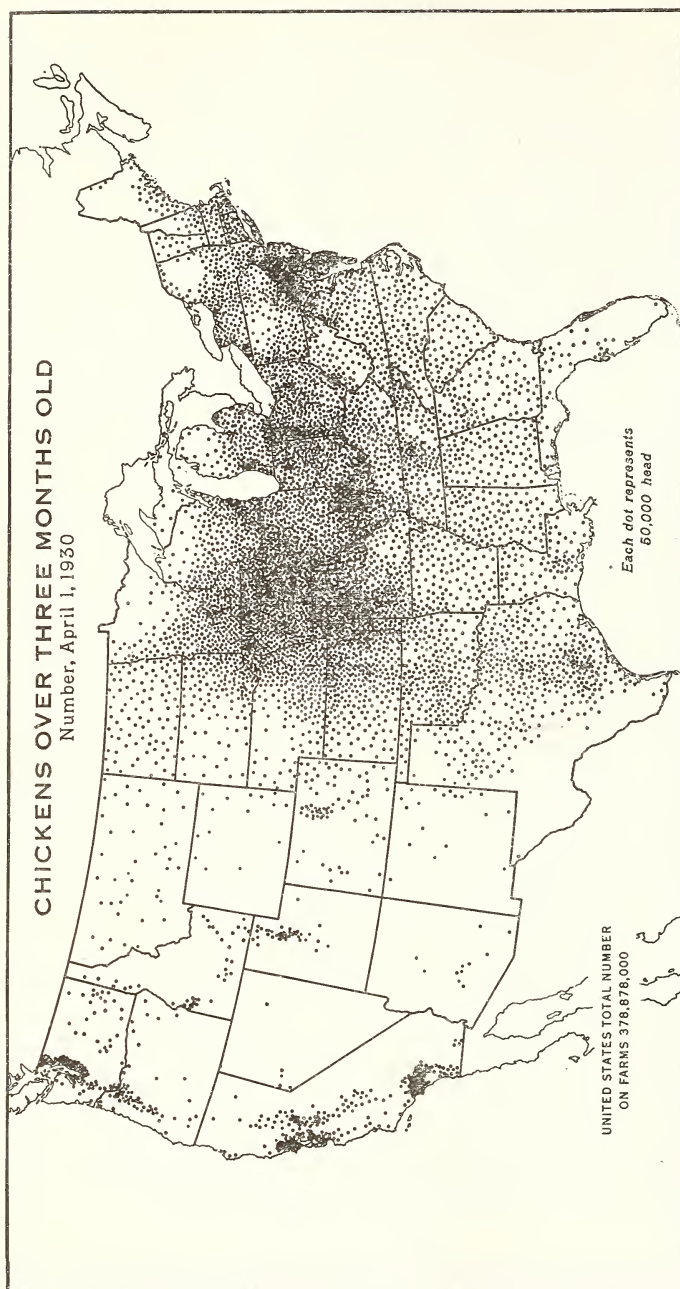
Specialized poultry farms are most numerous near the belt of large cities extending from Washington to Boston, in much of Ohio, Indiana, and southern Michigan, in a belt extending from southern Illinois past St. Louis to southwestern Missouri, and in the valleys of the Pacific coast, notably Los Angeles and Sonoma Counties, California, the Willamette Valley of Oregon, and the Puget Sound Basin of Washington. Location near large markets evidently is important. There are few specialized poultry farms in the South (fig. 139).

Farm flocks of fairly large size are numerous in the Corn Belt, where feed is cheap, and extend northward into the Dairy Belt and southward into the Corn and Winter Wheat Belt, particularly the more fertile parts. Farm flocks are smaller, but are important in the black waxy prairies of Texas. The farm flocks are associated primarily with home-produced feed and family farms.

The poultry industry apparently increased rapidly in importance during the decade preceding the depression. The number of chickens raised, as reported by the census, was 461,000,000 in 1909, over 473,000,000 in 1919, about 673,000,000 in 1929, and 599,000,000 in 1934. The number of turkeys on farms was 3,689,000 on April 15, 1910, about 3,627,000 on January 1, 1920, and 5,382,000 on January 1, 1935. Nearly 17,000,000 turkeys were raised during 1929, but the number on farms was not reported by the census of 1930. About 11,337,000 ducks were raised on farms in 1929, and 3,990,000 geese. Ducks and geese were not reported in the 1935 census.

BEES

Bees, like chickens, are kept in nearly all parts of the United States, but the regions of greatest number of colonies are different. The areas of greatest production of honey differ somewhat from those of greatest number of colonies. The southern Appalachian area has the most hives, but the irrigated valleys of the West, particularly in southern California, and several areas in the Dairy Belt produce the greatest quantity of honey.



BAE 32952

FIGURE 128.—Nearly half the chickens in the United States are in the Corn Belt and around its margin, where feed is cheap. But the two most notable districts of production are in southeastern Pennsylvania near Philadelphia, and in Sonoma County, Calif., especially the district around Petaluma. Six counties in southeastern Pennsylvania had a total of 5,000,000 chickens on April 1, 1930, or about 1,075 to the square mile; in Sonoma County there were over 4,000,000, the value of eggs and chickens produced amounting to over \$19,000,000 in 1929. Los Angeles County, Calif., had 3,300,000 chickens. California cities are supplied largely from these two counties; eastern cities draw their supplies from a much wider territory.

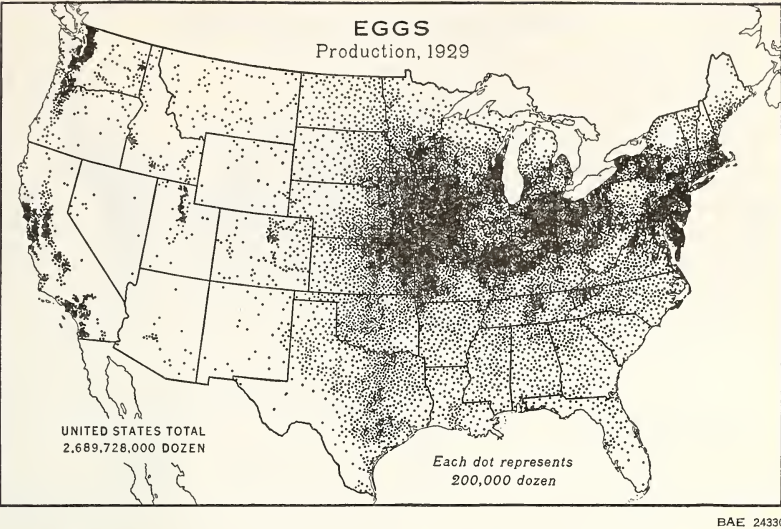


FIGURE 129.—The production of eggs is more concentrated than number of chickens in the Corn Belt, especially along its northern margin, and in the North Atlantic and Pacific States. Production of eggs during 1929 per chicken on farms April 1, 1930, as reported by the census, ranged from 62 in South Carolina to 133 in Washington. In general, the Northern States averaged around 84 eggs per chicken, the Southern 79, and the Western 109. Unlike hogs (fig. 100) the heavy production of eggs and poultry extends over the margin of the Corn Belt in nearly all directions.

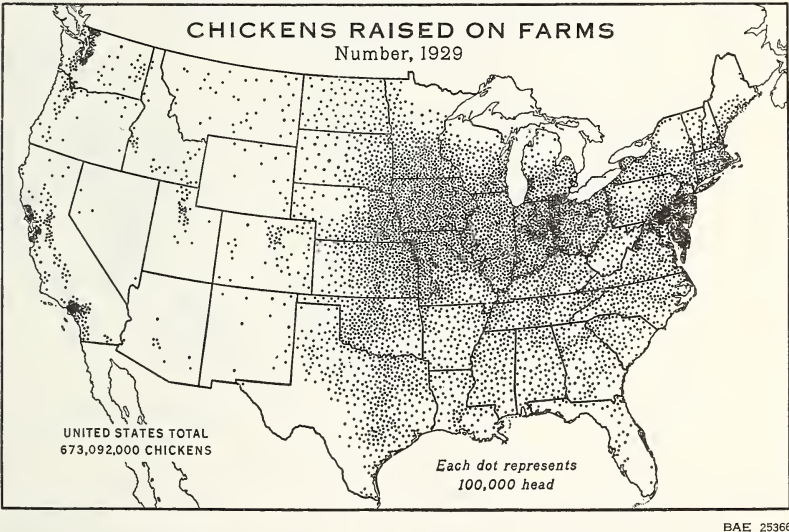
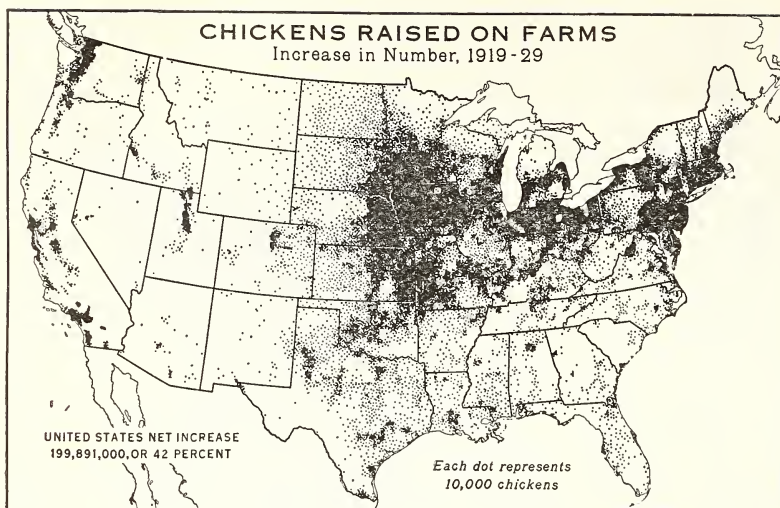
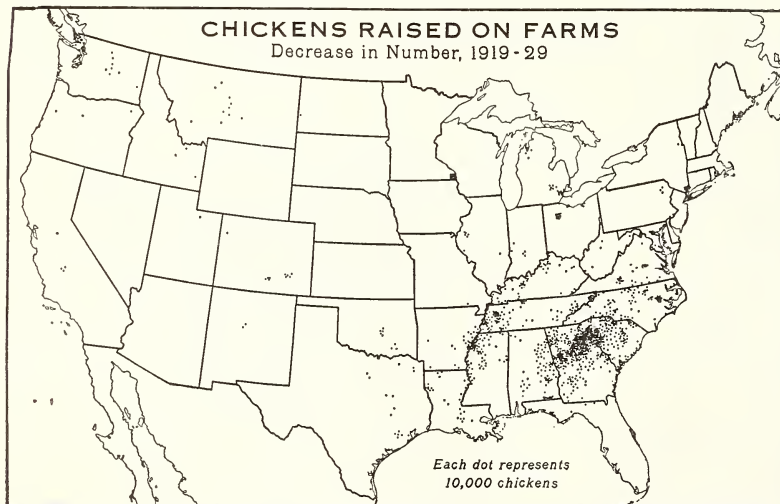


FIGURE 130.—The number of chickens raised is not so concentrated as the production of eggs, nevertheless southeastern Pennsylvania and the Delmar Peninsula, the Corn Belt, particularly the two western tiers of counties in Ohio, and the Pacific coast districts stand out strongly on the map. For each chicken on farms April 1, 1930, there were 1.9 chickens raised in the Cotton Belt in 1929 and 78 eggs produced, but in the Corn Belt the respective figures are 1.7 chickens raised and 80 eggs produced, and in California 1.5 chickens raised and 110 eggs produced.



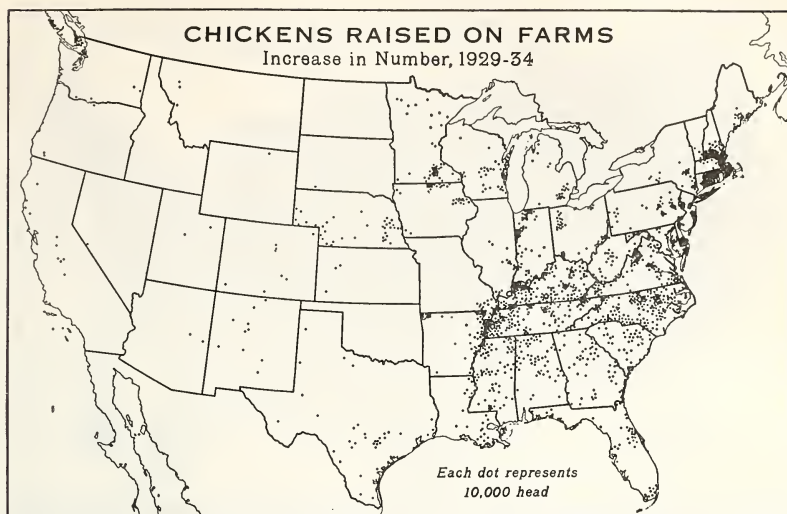
BAE 31257

FIGURE 131.—The poultry industry, including the farm flocks, expanded more rapidly between 1919 and 1929 than any other major livestock industry. The increase in chickens raised was 42 percent, as compared with a 16-percent increase in population. The increase was almost universal. It was greatest in numbers in the Corn Belt States (42 percent), but was greatest in percentage in the Pacific Coast States (102 percent), the North Atlantic States (77 percent), and the Lakes States (65 percent). In the South, excluding Texas and Oklahoma, the net increase was 7 percent.



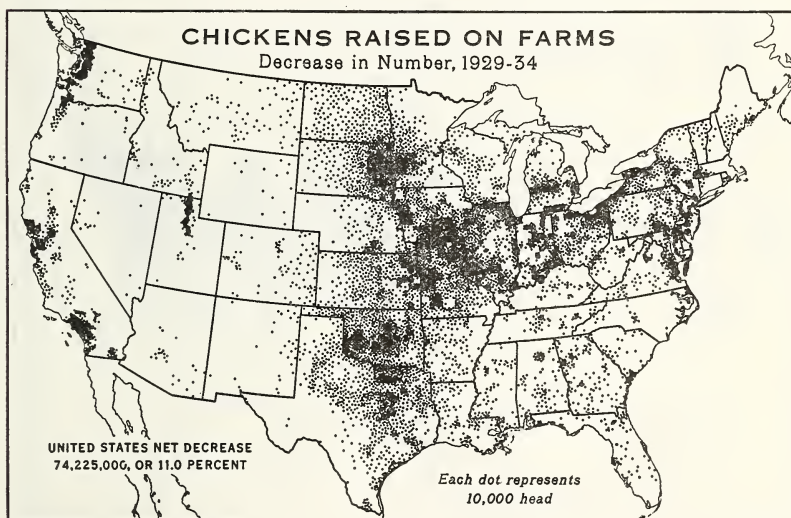
BAE 31258

FIGURE 132.—The decrease between 1919 and 1929 in number of chickens raised was almost confined to the southeastern States. In Georgia and South Carolina this decrease in chickens was associated with a decrease in number of farms (about 90,000) attributable mostly to the ravages of the boll weevil and soil erosion. A decrease in chickens raised occurred also in the Yazoo Delta of Mississippi, in western Tennessee, and in a number of counties in Kentucky, Virginia, and North Carolina. The outstanding decreases indicated in one county in Ohio and another in Minnesota are assignable, perhaps, to errors in enumeration.



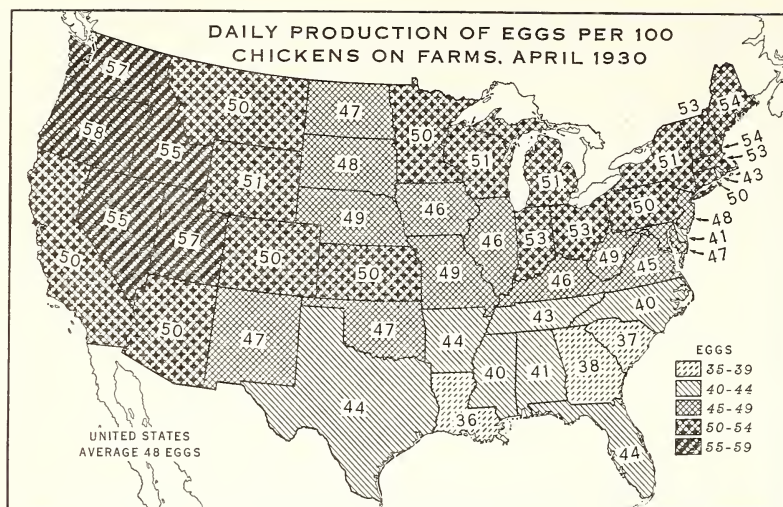
BAE 31630

FIGURE 133.—During the depression years an increase in number of chickens raised was reported from many counties in the Southeastern States, from southeastern New England, and scattered counties in the Dairy Belt and Corn Belt, with much smaller local increases in a few counties of Texas and the far West. But, in general, it was a period of contraction in the poultry industry in the humid East as well as in the drought-stricken West (fig. 134).



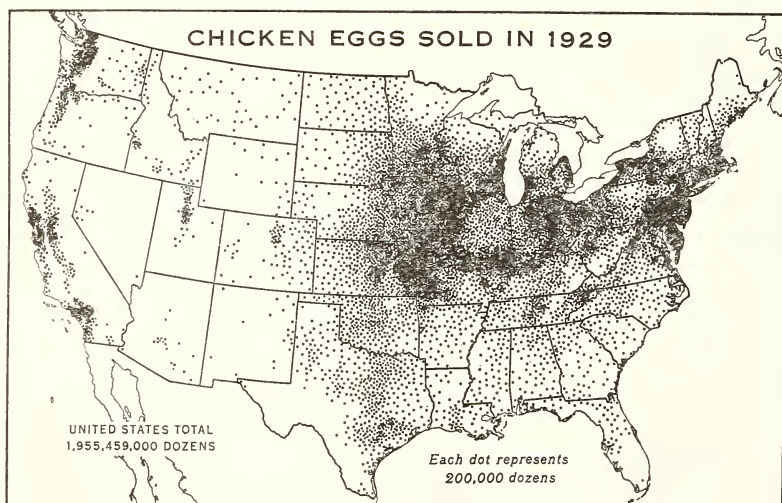
BAE 31631

FIGURE 134.—The decrease between 1929 and 1934 in number of chickens raised was widespread. The high cost of feed induced by the drought and low prices for poultry products associated with the depression were important factors in the general decline. The decrease was much less in the Southern States east of the Mississippi River, in New England, and in most of the Lakes States. It was notably heavy in the drought areas of the central West. The net decrease for the country as a whole was 11 percent.



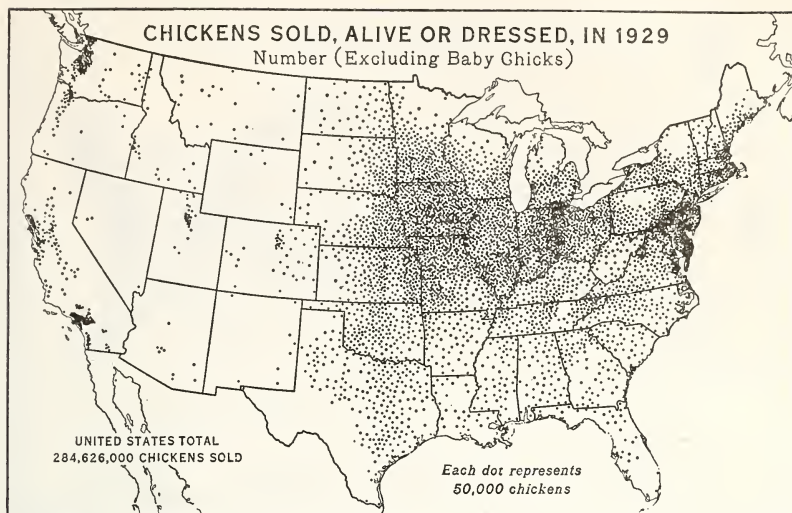
BAE 31304

FIGURE 135.—The differences between the North, the South, and the West in production of eggs per 100 chickens on farms when the census was taken, as of April 1, 1930, are not so large as the differences in annual production of eggs per chicken raised (see caption of fig. 130). The lowest production per 100 chickens, April 1, 1930, was in Louisiana, South Carolina, and Georgia, and the highest in Maine and New Hampshire in the East, Utah, Washington, and Oregon, in the West.



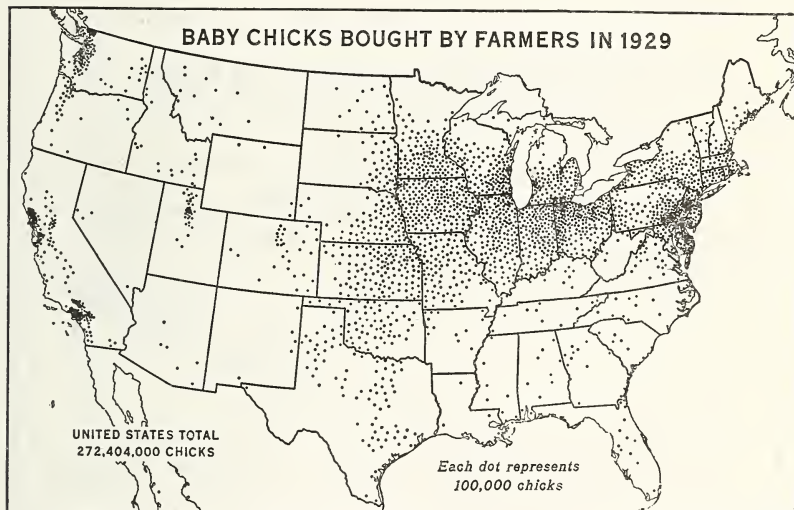
BAE 31450

FIGURE 136.—The sale of eggs by farmers in 1929 was even more concentrated than the production in the Corn Belt and its fringing areas, where feed is cheap, in the North Atlantic States, including Maryland and Delaware, and in the Pacific Coast States. In these coastal States there are large urban populations. Not many eggs were sold by farmers in the Cotton Belt, except in the prairie parts of Texas and Oklahoma, not many from the Wheat Belt, and still fewer from the Grazing and Irrigated Crops Belt, except from a few irrigated districts.



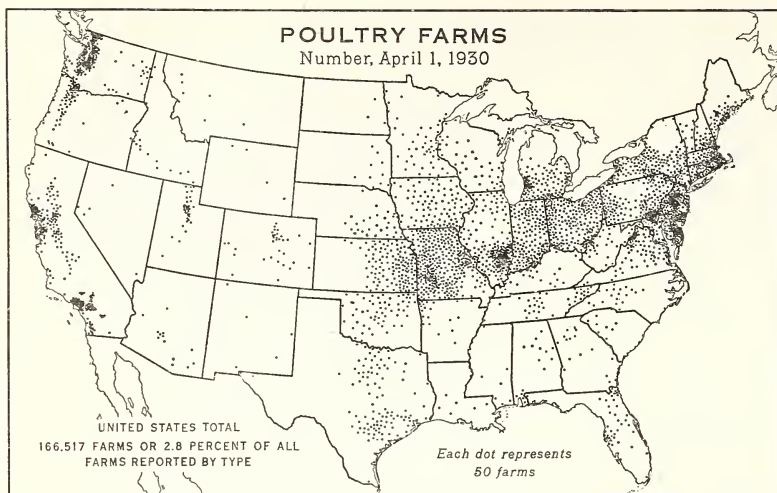
BAE 31256

FIGURE 137.—The sale of chickens by farmers, like that of eggs, was concentrated in the Corn Belt and adjacent areas, in the States north of the Potomac River, particularly southeastern Pennsylvania, and in the valleys of the Pacific coast, notably Los Angeles and Sonoma Counties, Calif., and the Puget Sound counties of Washington. But relative to these areas, the sale of chickens in the South was much more important than of eggs. Apparently about two-fifths of the chickens raised on the farms of the Nation are sold.



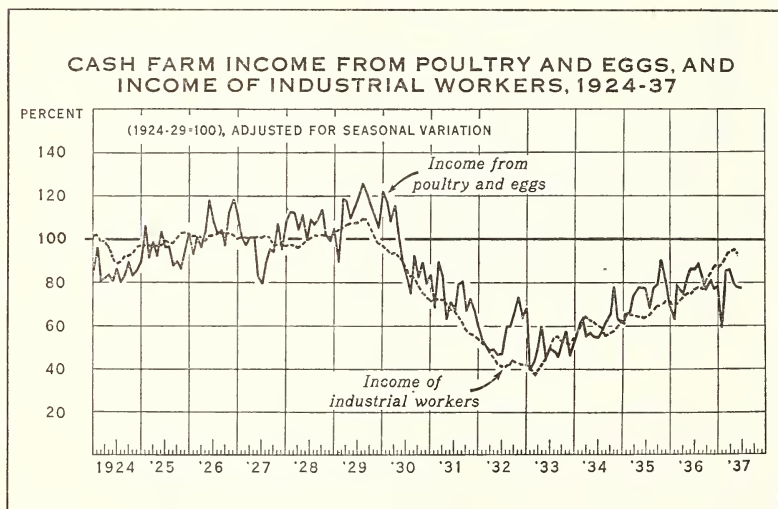
BAE 31451

FIGURE 138.—The purchasing of baby chicks (2 or 3 days old) by farmers from hatcheries has increased rapidly in recent years, but in 1929 it was still almost confined to the States north of the Potomac and Ohio Rivers, including the entire Corn Belt, with a projection southwesterly across the prairies of Kansas, Oklahoma, and Texas, and to the Pacific Coast States, and Idaho and Utah. The number of chicks bought was two-fifths of the chickens raised, but probably less than a third of the chicks hatched in the United States.



BAE 28250

FIGURE 139.—The concentration of specialized poultry farms north of the Potomac and Ohio Rivers and Arkansas, and on the Pacific coast, suggests close relationship to the large city markets. Nevertheless, millions of eggs are shipped from California to the Atlantic coast and arrive fresh enough to command the highest prices. Three broad areas may be noted—(1) the Atlantic Coast States, dominantly farms for the production of eggs from purchased feed for the nearby cities; (2) the Corn Belt margin, a combined egg and meat area; and (3) the Pacific coast valleys, primarily egg-producing areas.



BAE 27719

FIGURE 140.—The close relation between the cash farm income from poultry and eggs (sales) and the income of urban industrial workers is indicated in this graph, which also shows the great drop in income from poultry and eggs between 1929 and 1933. By 1936 this income had risen to nearly 80 percent of the 1924-29 level. The index numbers are plotted on the curves by months.

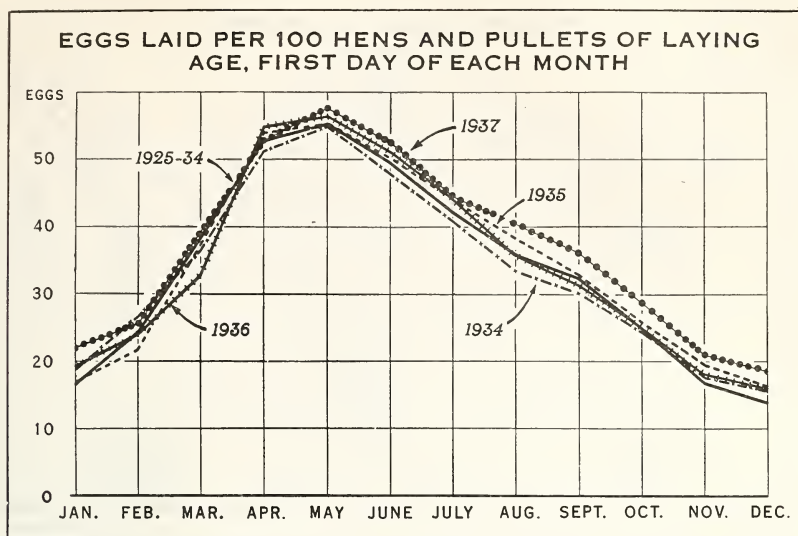


FIGURE 141.—The returns of about 20,000 reporters of the Department of Agriculture on number of eggs laid the first day of each month, averages for the United States, indicate a low of 14 to 16 eggs per 100 hens in December rising to about 55 eggs in May. The decline during summer and fall is more gentle than the rise, and is almost constant. Apparently no great variation in the seasonal trends takes place from year to year.

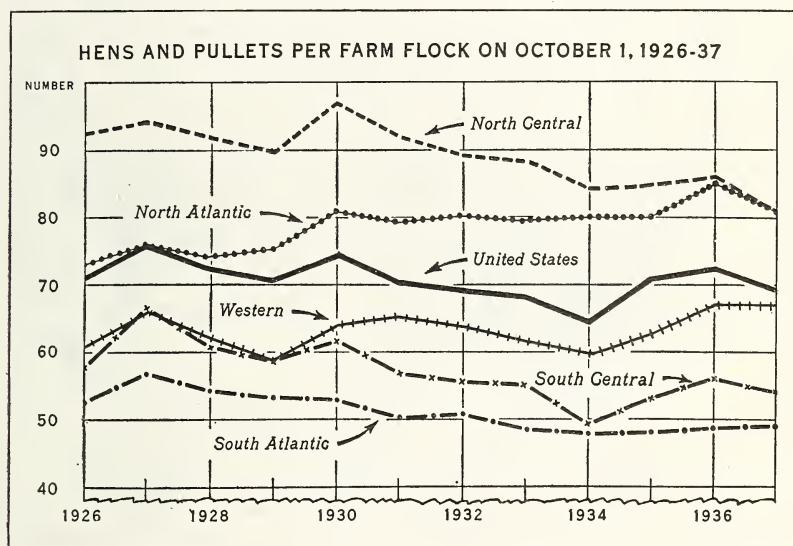
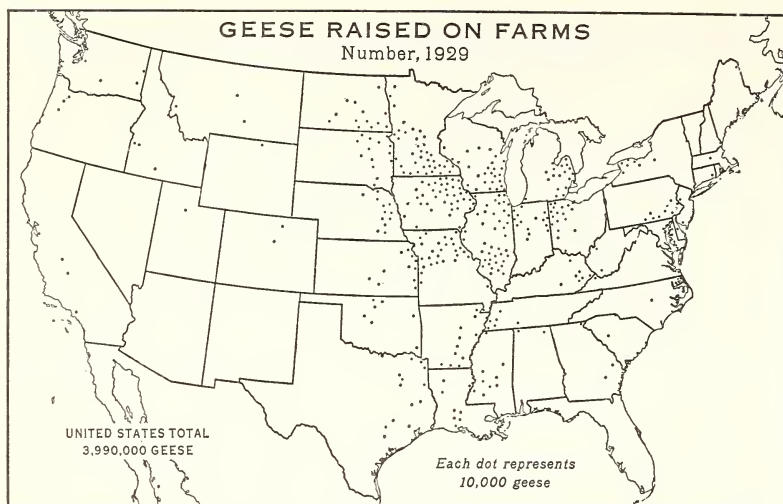
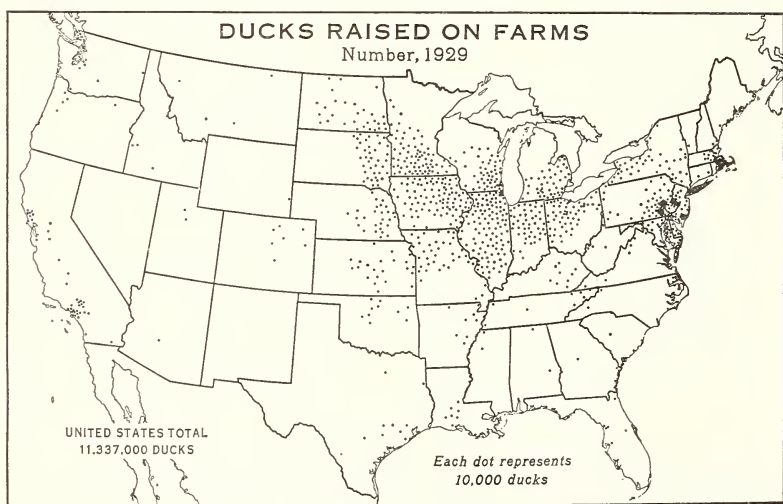


FIGURE 142.—Returns of reporters of the Department of Agriculture in the South Atlantic States, have shown an average of about 50 hens and pullets per flock in recent years, with a downward trend since 1927. In the South Central States the downward trend has been more rapid, in the far Western States less rapid. In the North Atlantic States the average size of flocks increased from 1926 to 1930, and has remained around 80 since. In the North Central States and in the country as a whole there was a downward trend during the depression.



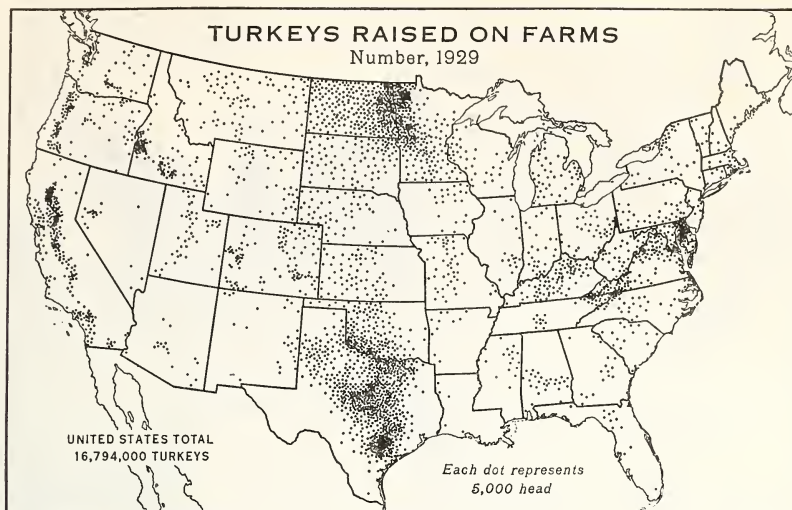
BAE 31247

FIGURE 143.—Geese, like chickens, are raised in the Corn Belt and adjoining areas, but unlike chickens there are relatively few in the North Atlantic and the Pacific Coast States. There are more geese in the western than the eastern Cotton Belt, more in the Spring Wheat than in the Hard Winter Wheat region. There is a suggestion of a relation in the geographic distribution of geese to that of farmers of foreign birth or parentage. In the Nation as a whole nearly 4,000,000 geese were raised, as compared with 673,000,000 chickens.



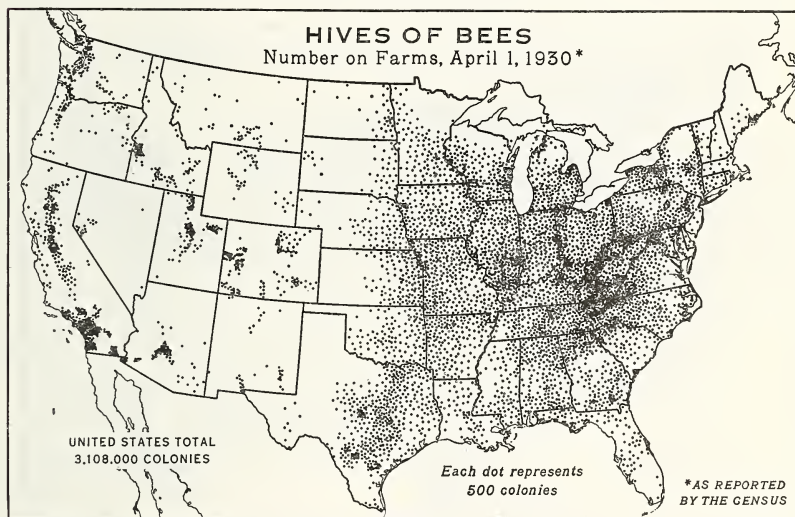
BAE 31248

FIGURE 144.—Ducks, like geese and chickens, are concentrated in the Corn Belt and adjacent areas; but, like chickens and unlike geese, many are raised in the North Atlantic States; mostly on large commercial farms near Philadelphia, New York, and Boston. A considerable number are raised in the Pacific Coast States, mostly in the same counties in which chickens are very numerous. Nearly three times as many ducks as geese were raised in 1929.



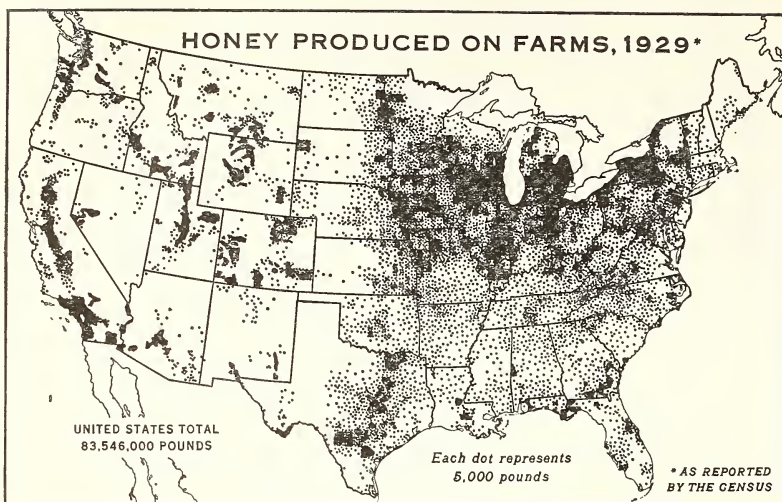
BAE 24966

FIGURE 145.—The geographical distribution of turkeys is very different from that of chickens, ducks, and geese. Most of the turkeys are located in other counties than those in which chickens are most numerous. The major areas of turkey production are central Texas and southern Oklahoma, where climatic conditions are favorable, and the Dakotas and western Minnesota, where wheat screenings (weed seeds, etc.) are inexpensive. Turkey production is increasing of late years in the Corn Belt and the East. Small areas of intensive production are the Delmar Peninsula, and the irrigated valleys of California and other western States.



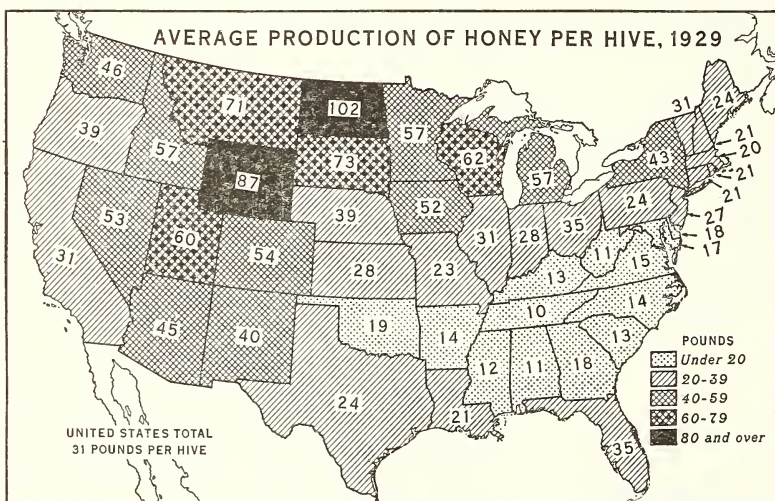
BAE 31490

FIGURE 146.—Two districts of dense distribution of bees stand out on the map—the southern Appalachians and southern California. The southern Appalachian district, extending from West Virginia to northern Georgia had about 360,000 colonies in 1930 and produced about 3,038,000 pounds of honey in 1929, whereas California, with only 201,000 colonies, produced 5,476,000 pounds. The irrigated districts in the West, where fruit and alfalfa furnish many flowers, show distinctly on the map. Districts having large numbers of bees are also found in New York State, along the Ohio River, in western Ohio, and in southern Illinois.



BAE 31481

FIGURE 147.—The irrigated districts of the Western States stand out more distinctly on this map of honey production than on the map of any other commodity, except alfalfa. Although the bees are kept by the farmers who live in the irrigated districts principally, they gather much of their honey from the desert plants. Western New York and southern Michigan and Wisconsin produced much honey in 1929, while in the southern Appalachians production was relatively small. In 1919 production was small in southern Michigan and much of Wisconsin and relatively large in the southern Appalachians.



BAE 31305

FIGURE 148.—In 1929, the production of honey per hive on farms reporting honey produced, ranged from 10 pounds in Tennessee to 102 pounds in North Dakota, and in 1919 from 10 pounds in South Carolina to 83 pounds in Wyoming. In 1929 the national average was 31 pounds, and in 1919, 22 pounds. Production per hive fluctuates with the flow of nectar from year to year, but is both higher and more stable, like that of milk per cow, in the North and West than in the South.

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